Devoted to Product Finishing

# Industrial FINISHING

TECHNOLOGY DEPT:
for NOVEMBER, 1938
NOV 22 1938

LILLY

Dependable

PRODUCT FINISHES
INDIVIDUALLY DEVELOPED

LABORATORY COOPERATION

SERVICE AND PERFORMANCE

UNIFORM PRODUCTION

Lilly Varnish Company
666 South California Street, Indianapolis, Indiana
Branches: Chicago, Ill.; Grand Rapids, Mich.; Gardner, Mass.
The LILLY COMPANY, High Point, N. C.

Industrial Finishes
ENAMELS . LACQUERS . VARNISHES

# Corrosion Problem?

## ROXAPRENE Can Take It.

*Continuous 5% Salt Spray for 6,000 Hours*
(Nitrocellulose lacquer over baked primer failed in less than 1/3 that time.)

*Immersion in Caustic Soda, 2%, for 600 Hours*
(Oleoresinous (pure phenolic base) finish failed in 18 hours.)

*Acid Brine (pH 6—6.5) Immersion for 600 Hours*
(Unpainted hot-dip galvanized steel failed in 17 hours.)

*Inhibited Hydrochloric Acid Solution for 90 hours*
(Oleoresinous (pure phenolic base) finish failed in 2 hours.)

*6 Months Exposure to Weather on Florida Coast*

### What is ROXAPRENE?

ROXAPRENE is a chlorinated rubber base finish engineered by ROXALIN chemists for manufacturers of products involving a severe corrosion problem or requiring high chemical resistance. Besides yielding such unusual protection against corrosion detailed above, ROXAPRENE possesses all the permanence of adhesion and flexibility which have made other ROXALIN finishes outstanding. Moreover, this corrosion resistant type of ROXAPRENE may be applied by conventional methods and air-dries to re-coat in 2 or 3 hours. Production schedules may be further shortened by force drying or baking.

*Send for the folder which illustrates the tests used in proving ROXAPRENE'S protection value.*

***These accelerated physical tests are backed up by three years' successful field experience in air-conditioning installations.***

**ROXALIN FLEXIBLE LACQUER COMPANY, Inc., Box 1811 Elizabeth, N. J.**

**ROXALIN *Flexible* FINISHES**

# BETTER WORK . . . . GREATER OUTPUT

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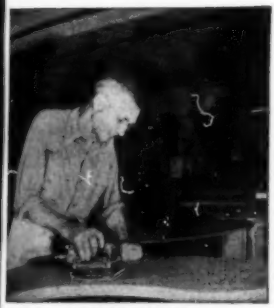
# STERLING Speed-Bloc Sander

RADIO CABINETS



FURNITURE

MACHINE TOOL

## SAVE 50% to 75%
## IN TIME, LABOR and ABRASIVES

**Regardless of the work . . . new or refinishing . . . sanding or rubbing . . . size or shape . . . curved or flat surfaces . . . wood, metal, fabric or composition . . . wet or dry . . . with water, gasoline, compounds, etc. . . . the Sterling will do the job many times faster than is possible by hand and produce a finish that cannot be excelled.**

## READ WHAT USERS REPORT

● RADIO CABINETS

**"We purchased six of these machines (Sterling Sanders) for rubbing console radio cabinets. The use of these machines cut the labor required considerably. They are used principally for wet sanding with water or light rubbing oil."**

● CASKETS

**"The machine is used on wood burial caskets having a lacquer finish. Wet sanding is employed. Production in the department where this machine is used has been stepped up 30 to 35 percent."**

● FURNITURE

**"We use this machine (Sterling Sander) to sand wood panels, table tops, chair seats and backs, desk tops and ends. This machine does reduce our labor costs, increase production and we get a more uniform finished product than when sanding by hand."**

● REFRIGERATORS

**"The Sterling Speed-Bloc Sander is being used on both cold and hot rolled sheets. It has not only reduced our labor cost, but has increased our production and given us far superior workmanship. Sandpaper cost has also been reduced about 50 percent. We are extremely well pleased with this machine."**

● MACHINERY

**"We are using this device (Sterling Sander) for sanding our machine bases and castings after they have been filled. We save about 60 percent on labor over the old hand method and get a more uniform finish."**

**Mail the Attached Business Reply Card Today for Literature.**

## STERLING PRODUCTS COMPANY

303-G DONOVAN BUILDING DETROIT, MICH.

*duranite Today's Finish For Today's Products

# CAN I AFFORD DURANITE?

The chances are you can. Because DURANITE, ZAPON'S highly successful new heat-reactive finish, is not just a single formula but rather a flexible group of finishes permitting modifications to fit widely varying specifications and cost budgets.

The cost of DURANITE is largely determined by the requirements of a given job. No one product needs all the properties obtainable in DURANITE, of course. There are white, transparent and colored DURANITES for the "custom-tailored" product and for the inexpensive mass production item, probably comparable even in cost with low-priced old style finishes.

However, the basic qualities responsible for DURANITE'S success are inherent in all modifications — phenomenally short baking schedules, excellent adhesion, flexibility and stubborn resistance to wear and abrasion. Any combination of qualities may be had.

RESISTANCE TO

Perspiration • Light exposure • Heat • Water • Butter Fat
Alcohols, Acid & Alkalis • Cleansing Agents • Salt Spray • Humidity

pure & permanent whites — range of colors — durable clears

*No matter what your product is or how exacting its finish requirements are, versatile DURANITE warrants investigation.*

*Trade Mark

ZAPON

EASTERN SALES:
ZAPON DIVISION
ATLAS POWDER COMPANY
Stamford, Conn.

WESTERN SALES:
ZAPON-BREVOLITE DIVISION
ATLAS POWDER COMPANY
North Chicago, Ill.

LACQUERS ENAMELS

BREVOLITE

INDUSTRIAL FINISHES

*Fifteenth Year of Publication*

# Industrial FINISHING

Reg. U. S. Pat. Office

**Devoted to Product Finishing in the Factory**

Vol. XV, No. 1 NOVEMBER, 1938 $2.00 a Year

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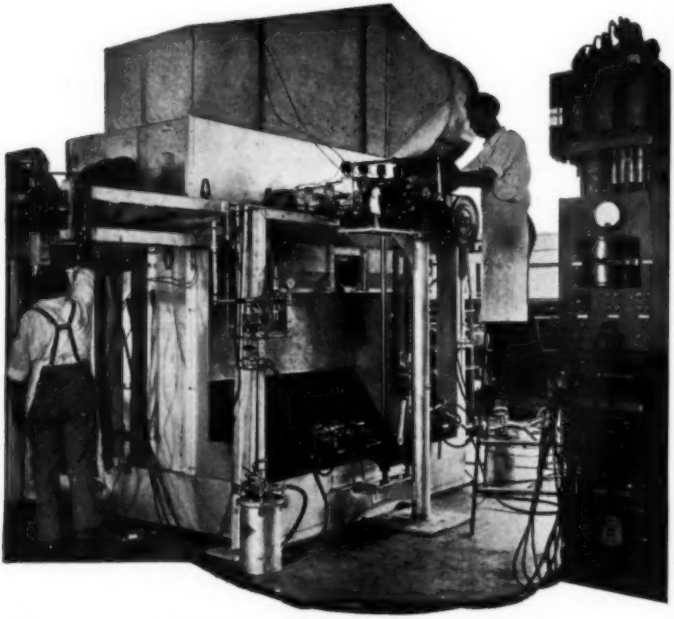

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Because spray-painting is being adopted for an ever increasing variety of products, DeVilbiss Experts are constantly confronted with complex problems that require new and unusual equipment.

When the wide range of DeVilbiss Spray-Painting Equipment (most complete line of its kind in the world) can't "answer" a new demand, DeVilbiss Engineers design equipment to satisfy the new requirements.

Scientific knowledge, long experience, and modern manufacturing methods have enabled DeVilbiss to solve many unusually difficult spray-painting problems. If *you* have a *tough* one, write, wire, or 'phone for a DeVilbiss Expert. No obligation! The DeVilbiss Company, Toledo, Ohio.

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1888 - FIFTY YEARS OF QUALITY PRODUCTS - 1938

Kindly mention INDUSTRIAL FINISHING when writing advertisers

# Letters from Readers

## OF INDUSTRIAL FINISHING

**These letters (and many others) were answered recently by the editorial department, but are published here to reveal certain interesting trends of desire and activity in the industry, and to encourage additional inquiries, comments and suggestions. Further information about any of them can be obtained by writing this office.—Editor.**

### Coating Machines

Will you please give us a list of firms manufacturing coating machines, both spray and roller type; and also tell us where we may find a source of supply for used coating machines?—J. K. Co. (Little Housekeeper Cleaning Sets and other Toys).

---

### Pearl Essence as Primer; Crystallizing Lacquer

Would you please forward to us the name and address of the makers of "Pearl Essence as Primer," mentioned in item No. 229, page 62 of January 1937 issue of INDUSTRIAL FINISHING? Also the name of the manufacturer of the Crystallizing Lacquer written up on page 73 of that same January 1937 issue? British Productions (Small Repetition Wood Turnings and Wood Parts).

---

That particular pearl essence finish is a product of The Mearl Corp., New York, N. Y., and the crystallizing finish is manufactured and sold by H. V. Walker Co., Elizabeth, N. J.—Ed.

---

### Bake Finish Remover

Can you give me the name and address of a manufacturer of some kind of remover or washing solution that will remove coatings, such as lacquer and ink, that have been baked on tin plate or tinned surfaces? At present we are removing the decorations by suspending the tin plate in a boiling solution until the coating is loose enough to scrub off. However, this seems to be a slow expensive method.—D. F. O.

---

### Who Makes "Say-Lco"?

We have a request in our Buyers' Service for the manufacturer of the "Say-Lco" or "Soy-Lco" which is used for protecting finish on automobile bodies. Do you have any information as to the manufacturer of this trade name?—H. Y. Corp.

---

Can some reader supply this information?—Ed.

---

### Graining Tile Board

In September issue of INDUSTRIAL FINISHING, page 5, I notice that "A. C. Inc." asks for information about finishing Masonite panels. The firm I am connected with has specialized in products of this nature for several years and I would appreciate it very much if you would forward the name of this concern to me, so that I may contact them.—R. H. E.

---

I am interested in the letter you quote from "A. C. Inc." on page 5 of the September issue of INDUSTRIAL FINISHING, regarding equipment and materials for producing graining effects on tile board. Would

# NUOIL!! FILLERS

**POSITIVELY the greatest improvement ever made in Wood Filler. Wipe "with the greatest of ease," after THIRTY MINUTES or even ONE HOUR. Do a BETTER job with LESS material and about HALF the work. Available in standard or special colors.**

## AND OTHERS

**WATEROIL STAINS**

Alone in their class. Do not precipitate or change with age. Fast to light, non-bleeding, quick drying and non-grain-raising.

**NO. 1900 CLEAN-UP POLISH**

Absolutely eliminates bluish bloom or haze—leaves surface clear, clean, free from dust collecting or finger marking.

**RUB-LESS LACQUERS**
(Licensed)

Guaranteed better, smoother flow. Require less rubbing. Practically water white—extremely resistant to alcohol and checking.

**DU BAR BLEACH**

Single application — the closest to perfection and the most fool proof. If you have bleaching problems we guarantee DuBar will solve them.

**For Liberal working samples of any items listed above, write at once to**

## V. J. DOLAN & COMPANY, INC.

**Mfrs. of "Unquestionable Quality" Wood Finishing Supplies**

**1836-52 NORTH LARAMIE AVENUE CHICAGO, ILLINOIS**

# DEPENDABLE ADHESIVE TAPES FOR INDUSTRIAL PURPOSES

PERMACEL
THE PAPER MASKING TAPE
JONFLEX
FINE CLOTH MASKING TAPE
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COARSE CLOTH MASKING TAPE
UTILITAPE
WATERPROOF CLOTH TAPE
IN RANGE OF COLORS
ALL TAPES ¼" TO 36" WIDE IN 60-YD. ROLLS

SAMPLES ON REQUEST

**INDUSTRIAL TAPE CORPORATION**
NEW BRUNSWICK, N. J.

you give us the full name and address of this company, so we can contact them if they are in our section of the country?—D. L. Co.

Referring to an article in your "Letters from Readers" section of Sept. issue, by "A. C. Inc.," regarding the manufacture of tile and imitation wood and marble patterns on masonite, I have had 15 years' experience on these finishes and have complete knowledge of each operation. I also know what type of machines are needed and how to build them, which includes the following: Scoring, striping and knifing. The machines I have in mind are the most economical and do a fine job. . . . —L. J. B.

## Flameproof Fabrics

On page 52 of INDUSTRIAL FINISHING for August 1938, there is a note in regard to "Flameproof Fabric." Is it possible for you to give us any additional information in regard to the source of the material mentioned?—P. L. Co. (Spark Plugs).

This is a product of The Laboratory Equipment Co., New York, N. Y.—Ed.

## Bleaching Materials

Please send me at once names and addresses of concerns from whom I can buy bleaches to bleach all kinds of woods in furniture and get the same results as the Grand Rapids, Jamestown or High Point furniture manufacturers obtain. I have concerns in England interested in the best and most practical and economical materials of this kind.—O. R. W.

## Tumbling Barrels

We have received an inquiry regarding tumbling machinery, and would be extremely obliged if you could put us in touch with makers of such machinery suitable for the coating of eyelets.—T. S. L., London, England.

One of our customers has asked us to secure some information for him on a paint tumbling barrel. As we understand it, there is some equipment on the market by which small articles, such as buckles, buttons, etc., can be successfully coated by merely dropping them into a revolving barrel arrangement which contains the paint mix—and which

*Dear Mr.—*

**FURNITURE MANUFACTURER—**

We offer:

QUART SAMPLES FREE

**of any of our complete line of production furniture and woodfinishing products needed to**

***Make your own tests—to Convince yourself***

**Many manufacturers have taken advantage of this offer. Result—NOROY SEALERS and LACQUERS with 21% solids at spraying viscosity are now being used in a number of important plants.**

RUDD
LACQUER & SEALER
— CORP. —
80 CLIFF ST., NEW YORK, N. Y.
FACTORY — RAHWAY, N. J.

# LOOKING *for more* BUSINESS?

You can find it by offering "flocked" signs, show cards, window backgrounds, counter backgrounds, counter display pieces, etc., for stores, studios, salons and display rooms.

*Use CLAREMONT FLOCKS —available in brilliant colors or white—*

*COTTON—WOOL—RAYON*

When your customer or prospect sees it and feels its smooth velvety finish, he's sure to ask, "What is it?" That's the beginning of "plus profit" business for you. Now is the time to get after "plus profit" holiday business.

*Use CLAREMONT FLOCKS on your own advertising pieces*

**CLAREMONT WASTE MFG. CO.**

CLAREMONT, N. H.

*The country's leading manufacturers*


are somehow automatically removed from the barrel thoroughly coated and ready for the drying process.

Our customer stated that he believed there was some equipment on the market called "Filwhirl Centrifugal Enameler," but did not know the name of the firm manufacturing it. Any information you can give us on this subject will be appreciated or, if you will give us the names of the firms manufacturing this type of equipment, we shall contact them direct. — P. W. Co. (Paints, Varnishes).

---

The Filwhirl Enameler is a product of Leon J. Barrett Co., Worcester, Mass.—Ed.

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## Spray Booth Coating

In October 1937 issue of INDUSTRIAL FINISHING we notice an item by the Editor on removable coatings for spray booths—on page 46 of that issue. If it is still possible to secure the name of the manufacturer of this material called "Kelsanite," we would appreciate having this information.—W. Mfg. Co. (Metal Office Furniture).

---

## Stripes in Routings

We are wondering if you know of any concern that makes a striping machine designed to put stripes in the routings or grooves on furniture, particularly breakfast room sets? If you know of a concern making such a tool, or of anybody using a tool to do this sort of work, we would very much appreciate their name and address.—S. N. Co. (Paints, Varnishes, Lacquers).

---

Some concerns use striping tools for this work. Others use a small oil can or a large rubber bulb with a medicine dropper nipple.—Ed.

---

## Equipment Wanted for Prefinishing Flooring

We are contemplating an operation for the prefinishing of hardwood flooring, and desire to get in touch with manufacturers of electrical equipment which might prove suitable for our purpose. One of your regular readers tells us that through the advertising pages of INDUSTRIAL FINISHING magazine we might be able to get in touch with manufacturers whose equipment could be

*(Continued on page 50)*

# For MODERN Finishes

**STILLE-YOUNG**
**LACQUERS · STAINS**
**SEALERS · FILLERS**
**ENAMELS**

1939 will be another year! . . . Time moves fast—and there are constant changes. . . . Stille-Young Modern Finishes will keep you ahead.

*Now is the time to act*

THE
**STILLE-YOUNG CORPORATION**
MANUFACTURERS
CHICAGO, ILLINOIS

# STILLE-YOUNG
## dependable LACQUERS

Photograph, courtesy of Paasche Airbrush Co.

# How to Finish

FLOCKED finishes are rapidly becoming popular for finishing certain types of furniture and other useful articles. Flocks are cloth materials—minute particles that are ground into lengths of 1/64 to ¼-in. from silk, rayon, wool, or cotton. The finish is easy and economical to apply and it affords a soft texture decorative coating. These finishes are now being extensively used on radios, wall panels, furniture, lamp-shades, air conditioning units, artificial limbs, display forms, juvenile furniture, caskets, interiors of silverware and watch cases, bottom pads for reading lamps, etc.; they provide an ideal absorbent base for moth-proofing liquids in chests and closets.

Flocks are applied by blowing (spraying) them upon a delayed-drying sticky binder with a special flocking gun. This binder may be applied by brushing, dipping, spraying, or by the silk screen method. The temperature of the room in which the flocking is done should never be below 60°F. and all of the air used in the application of the binder and flocks must be perfectly dry.

### Silk, Rayon, Wool, Cotton and Mixtures

As to the opacity and covering capacity of the different flocks, silk is very expensive for use commercially, but it gives a finish with a high sheen and a fair nap. Rayon has a long high nap but is not very opaque; however by the addition of approximately 25% wool or cotton, the opacity is greatly improved and the cost

Novelties at right were loaned for photographing through the courtesy of Claremont Waste Mfg. Co.

Book ends and door stops made of cast iron and finished with flock. Elephant is bright yellow; scotties are dark gray; ship is white, black and yellow on blue and white waves which form the base.

BY H. H. MENEFEE

# with Flocks

is lowered considerably. Wool has good opacity but the nap is very short. Cotton covers extremely well but has no nap at all. A mixture of any two of these types of flock tends to improve their effectiveness.

The different colors in the flocks can be intermixed just as ordinary oil colors can be mixed or tinted. You simply put the flocks in a large bag or container and shake rather vigorously until the colors are thoroughly mixed.

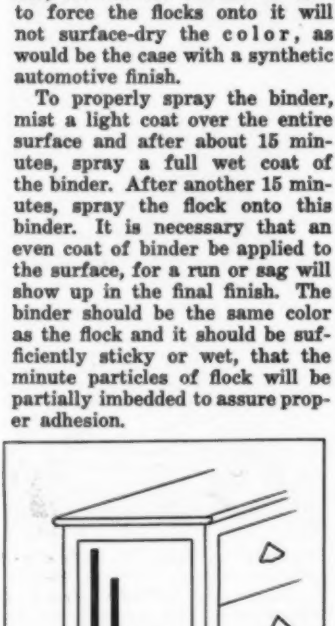
The flock finish has become popular for small radios and home air-conditioning units. Many of the latter are custom-made or at least custom-finished, so it affords the salesmen for the company an opportunity to furnish the unit in a color and finish that will harmonize perfectly with the color scheme of an attractive home.

Most of these cabinets are metal and require a good metal primer or primer surfacer. After spraying a medium heavy coat of metal primer and allowing it to dry, the customary practice is to sand it lightly and then spray on the binder that is to hold the flock.

The binder should be a delayed-drying synthetic material, and it

should be reduced with a light-bodied clear synthetic, instead of a regular reducer; this increases the tack of the color medium. A synthetic silk-screen process color is the proper color medium to use, because the air that is used to force the flocks onto it will not surface-dry the color, as would be the case with a synthetic automotive finish.

To properly spray the binder, mist a light coat over the entire surface and after about 15 minutes, spray a full wet coat of the binder. After another 15 minutes, spray the flock onto this binder. It is necessary that an even coat of binder be applied to the surface, for a run or sag will show up in the final finish. The binder should be the same color as the flock and it should be sufficiently sticky or wet, that the minute particles of flock will be partially imbedded to assure proper adhesion.



FURNITURE IN NATURAL FINISH

This finish may be force dried for two hours at approximately 165°F. or air dried for 24 hours before it is brushed down with a stiff, stubby bristle brush, to produce an even nap on the entire surface. To further enhance the finish, shading of a darker color can be sprayed around the openings and edges of the finished object. An aniline dye-stain is the best color to use as a dye for flock finishes.

### Decoration of Furniture by an Appliqued Design

As a decoration and an appliqued design on panels of wood grained materials on dressers, chest drawers, beds and other pieces of furniture, flock makes a most effective medium to use. These designs are applied in two different ways: One is to cut a stencil in sheet copper or oiled stencil board and spray through it a heavy coat of the synthetic binder. Allow it to set about 15 minutes; then spray the flock on it. The other method is to prepare a silk-screen stencil and screen the design onto the surface; then spray the flock.

This binder, when applied by silk screening, should be mixed with a falsebody material or base and reduced with a clear synthetic medium to squeegeeing consistency. Here's a tip on screening the binder: Pull the squeegee over the design once at the usual pressure and then pull the squeegee over the design once more with very little pressure, thus assuring a heavy deposit of the binder on the surface so as to provide good adhesion of the flock. This particular use of flock has an extremely large field of adaptability, especially in the field of juvenile

furniture. Nursery designs and patterns can be stenciled or appliqued in bright colors on juvenile furniture, thereby enhancing it's attractiveness and effectiveness as a decoration.

### Application of Flock to Cheap Woods

Probably the widest use for flock is its application on cheap woods to hide defects and give a rich finish to a moderate priced piece of furniture. A typical method of applying flock to wood surfaces is as follows:

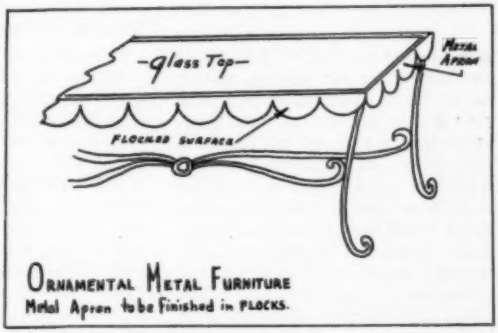
1) The surface must be thoroughly dry and smoothly sanded. Spray the surface with a white lacquer undercoater reduced about 40% with a good grade of lacquer thinner. After about an hours' drying time, this surface should be sanded to provide a smooth surface to the undercoater.

2) Apply a binder of the same color as the flock that is to be used. As a binder, I suggest using a synthetic silk-screen medium mixed 50/50 with a clear synthetic varnish to a liquid consistency; then reduce with a slow-drying synthetic reducer to spraying consistency. Spray a light mist coat of the binder on the entire surface. Then, after approximately 15 minutes, spray a full wet coat of the binder on the surface and allow it about 15 minutes to set before applying the flock. This prepares the surface.

3) Here is the most important step in the finishing system: To properly spray flock, there must be a sufficient supply of air. The pressure need be only about 30 or 40-lbs., but the volume should be near 6 or 7-cu.ft. per second.

### The Flock Spray Gun and Container; Drying

The adjustment on the flocking gun, to regulate the amount of air that agitates the dry flock, should be set to allow the smallest necessary amount of air to enter the flock container, so that only a small amount of flock will be agitated, thus affording a higher pressure for blowing the flock onto the binder. Flock should be blown with a pressure sufficient to imbed the particles in the binder.



ORNAMENTAL METAL FURNITURE
Metal Apron to be Finished in FLOCKS.

Flock should be sprayed very much the same as spraying a surface with paint. If there happens to be a spot that is not coated heavily enough, simply spray the flock over this spot again until it is covered as heavily as the remainder of the surface. If the wood is thoroughly dry, or if it has been dried in an oven before

the work was started, the binder may be force dried at approximately 150°F. for two hours. Products made of wood can not be heated as hot as metal surfaces, because heat has a tendency to crack the wood and also causes any resins or liquids to soften and come to the surface, causing the finish to blister and flake off.

### Highlighting a Flock Covered Surface

To highlight certain portions of a flocked surface with flock of another color or shade, use a water white clear lacquer mixed with a retarder thinner, with approximately 1-oz. of castor oil to the gallon of reduced lacquer. Spray this over the finished flocked surface, and spray the other color flock over this binder. This binder, being colorless, leaves the second flock somewhat transparent, thus giving a 2-tone effect that is most effective. Such binders must be flocked immediately, as they dry rapidly and being on such a porous surface, the absorption is extremely high, thus speeding up the drying time.

Note: When a clear lacquer (retarded drying) is used as a binder it has practically no build, therefore it allows the second coat of flock to partially imbed itself in the first coat of flock. A single coat of flock is not thick enough to be objectionable when used as a highlight. This highlight is usually shaded off at its edges, thus eliminating any noticeable "build up" or sharply defined edge. The clear lacquer is used in order to prevent any opacity . . . . another reason for not applying a heavy coat of flock for the highlight.

After the flocked finish is thoroughly dry, a stubby fitch brush is used to brush it evenly, thus leaving an even nap. A small portable vacuum cleaner is also effective for removing the excess flock. To clean flocked surfaces, use a rag dampened with a suitable cleansing agent, such as energine, etc.; rub it gently and in a circular motion on the spot to be cleaned. Repeat this action until the spot is removed.

### Reclaiming Booths

In setting up a production line of equipment for doing flocking on a commercial basis, the reclaiming booth should not be overlooked, as it is essential to reclaim, for re-use, all flock that is not used at the first spraying. There are several good reclaiming booths on the market. The suction fan draws the flock to the rear of the booth where it collects on the surface of a piece of cloth. At intervals this cloth can be lifted out and emptied into the flock container for use again.

The flocked finish is rapidly becoming very popular, and it is up to the men who develop new methods of application to devise a greater variety of uses for it in the different industrial lines.

---

## Represents Despatch Oven Co. in Far Northwest

The Scientific Supplies Co., 123 Jackson St., Seattle, Wash., has been appointed as exclusive Despatch industrial oven and furnace representative in the states of Washington, Oregon, Idaho and Montana.

For a number of years, this firm has been an authorized Despatch laboratory equipment distributor and with the addition of the industrial ovens and furnaces to the laboratory equipment line, they are now in position to assist with any oven or furnace problem.

# Why Finish Wouldn't Dry

**BY K. H. HERBERT**

**Trick method gets a finisher into trouble and discredits him before the entire factory organization.**

I HAVE SEEN some colossal smears in my time, but recently I saw one that topped them all. It was the direct result of using an unproved trick finishing method.

I received an urgent telephone call from the foreman of a finishing room. The voice at the other end of the wire was one of despair urging me to hurry over as soon as possible. When I arrived the place was a bedlam of noise and confusion. Every white-collared employe from the president to the office boy was feeling some aqua-marine-colored wooden boxes to see how the finish was drying.

The strange thing about the layman who is unfamiliar with paint is that, instead of touching the back of his finger gently to an under edge of a painted surface, in order to determine how the finish is drying, he invariably places his finger tips to the very surface that will show up the worst. Then, instead of being satisfied with one feel he starts patting the surface so much that you are reminded of a detective frisking a thug. When several people like this get through feeling a tacky surface, a kindergarten turned loose in a bowl of jam would leave fewer fingerprints.

**Two Coats of Shellac . . . .**

Through all the confusion I was able to gather that the boxes had been sealed with two coats of shellac. Then they had been painted with an oil-type enamel, but for some reason or other the finish would not dry. Finally, in desperation, the foreman had mixed up a concoction consisting of a small amount of varnish, a large percentage of japan drier, together with turpentine, and applied this mixture, hoping to dry the surface sufficiently to be able to ship the boxes. But instead, he only succeeded in causing the surface to check.

★ ★ ★

Everyone had a suggestion as to why the paint wouldn't dry, but no one had been able to remedy the situation. I usually make it a point to keep "the lip buttoned" until I can trace the trouble down through a process of elimination. When I examined the boxes I noticed the finish felt strangely tacky—a tackiness that shouted the presence of a wax retarder. I examined the enamel and thinner but they seemed to be in order and to set up

quickly when applied to a clean board.

The finishing foreman assured me that the trouble could not be the shellac, as it had been used successfully in the pattern shop. However, I asked him to accompany me to the pattern shop and show me what shellac had been used on the boxes. I examined a shellaced piece. One look gave me the clue I was after, and one feel solved the case. It would not stand the finger-nail test.

The finishing foreman thought that inasmuch as the boxes would have to be sealed he might just as well use aqua-marine-colored shellac, and then he would have to use only a small quantity of enamel. He did not take into consideration the fact that, due to its wax base, it would act as a retarder and not dry thoroughly.

## Elementary Dipping

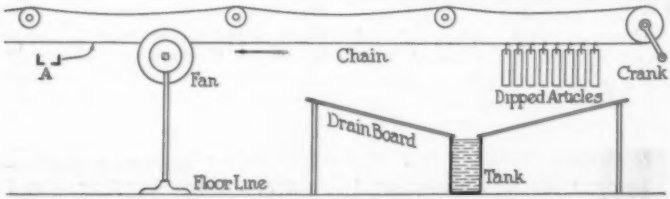
A MANUFACTURER of pressed metal specialties has in operation an elementary but economical method of dipping, hanging up and moving away certain small parts which are given a one-coat solid color lacquer finish. A side elevation diagram of the principal equipment is shown in the accompanying illustration.

Preparation of the metal parts consists of dipping wire baskets full of them into a vapor degreasor to remove all grease and dirt that have accumulated during machining and forming operations. After immersion in the heated liquid and vapor the parts are withdrawn perfectly clean and dry. No brushing, blowing or wiping is needed. One operator usually takes care of both the cleaning and dip-finishing, although when greater output is required two or more workmen are employed on the job. The degreasing cabinet is close to the dip tank—to the right of what is shown in the illustration.

The workman removes cleaned parts from the wire basket, attaches them to wire hooks and hangs them on a horizontal rod within easy reach of the dip tank. The tank is a cylindrical container about 8-in. in diameter, therefore lacquer evaporation is reduced to a minimum because of the small area exposed to the air.

As the operator hand dips the parts one at a time he hangs them to the square flat links of a horizontal chain supported between parallel angle irons positioned as shown in the cross section marked *A*. Every eighth link has spread wings which rest upon the angle irons; this prevents the

*(Continued on page 21)*




**Dipped articles are hung to a chain by which they are moved to left to drain and dry.**

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lower strand of chain from sagging and still allow ample space between the angle iron tracks for the easy placement of hooks. Narrow drain boards catch the drippings.

When the section of chain close to the dip tank is loaded the operator simply turns the crank-operated sprocket wheel at the right and moves this section farther to the left. As dipped work moves to the left it comes within range of a pedestal electric fan which helps to speed up the drying. At the far end of the chain —about 30-ft. from the crank sprocket — the parts are dry enough to handle and are removed.

While this equipment is simple and effective, the principle upon which it operates is capable of considerable variation and elaboration — and equipment of that kind is extensively used for greater production. For example, one can use a wider tank and, instead of a single chain, have two parallel chains 3 to 6-ft. apart. Instead of dipping the parts one at a time, several can be hung on a rod, dipped and hung to hooks hanging from both chains. The chains can be power driven through a reduction gear. Instead of using the single fan to accelerate the drying, the dipped parts can be arranged to pass through a drying chamber—or an oven in case a bake finish is desired.

## "Staybelite"—Hydrogenated Rosin

The Hercules Powder Co., Wilmington, Dela., announces the commercial production of hydrogenated rosin. The new product, called Staybelite resin (registered in U. S. Patent Office) retains the advantages of rosin but virtually eliminates its tendency to oxidize and become brittle and yellow with age. It is claimed that the Hercules patented process is the first to make available a highly hydrogented rosin to industrial consumers of resinous materials.

Staybelite is much lighter in color than the lightest rosins now available, and this color is retained on exposure to light. Hydrogenated rosin will broaden the use of rosin in paints, varnishes, lacquers and adhesives, and can be used in other processes where rosin has been indicated but could not be used previously because of its tendency to oxidize and deteriorate.

## Metal-Cleaning Machine

A new 4-page bulletin describing and illustrating the construction and operation of several different types of machines for cleaning metal parts and products, preparatory to finishing, is being sent out by G. S. Blakeslee & Co., 19th St. & 52nd Ave., Cicero Station, Chicago, Ill. It is of interest and value to concerns that have metal-cleaning operations.

## Plywood Building Fireproofed with Rezitex Paint

A new gymnasium recently built at White Salmon, Wash., is constructed 85% of synthetic-resin bonded fir plywood and painted with "Rezitex," a new synthetic resin-bound fire-resistant plastic paint—ideal for application on exterior plywood surfaces.

The entire building was given two coats of Rezitex—150 gallons. The roof and side walls were covered . . . . an average of 84-sq.ft. per gallon being used on walls, and 79-sq.ft. on the roof (two coats). All surfaces were Rezited before application of the Rezitex. The paint was sprayed and brushed on and made a perfect job . . . . hiding joints and giving a textured surface that simulated concrete or stucco construction. In addition to giving an attractive appearance, the paint coating provides protection for the surface against weather and fire.

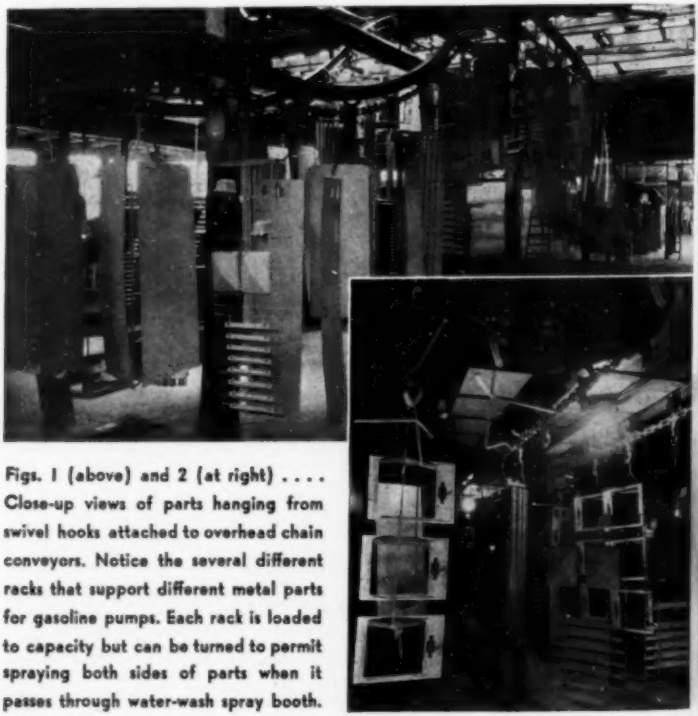
Standard laboratory tests prove Rezitex able to withstand an 1800°F. open Bunsen burner flame for five minutes without disintegrating. It is a product of I. F. Laucks, Inc., Seattle, Wash., manufacturing chemists, and a companion product to their Plasterez fire-resistive paint for interior surfaces.

# Finishing Gas Station

ONE OF THE outstanding installations for cleaning metal parts, bonderizing their surfaces, spray-painting them and oven-baking the coatings, was installed recently at the Bennett Pump Plant of Service Station Equipment Co., Muskegon, Mich.

This installation has the latest design of preparatory and finishing system equipment. It includes a 5-stage cleaning and bonderizing system, water-wash spray booth, and a 5-lane continuous-conveyor high-temperature bake oven.

The preparatory operations—metal cleaning and bonderizing—are very important in making



Figs. 1 (above) and 2 (at right) . . . . Close-up views of parts hanging from swivel hooks attached to overhead chain conveyors. Notice the several different racks that support different metal parts for gasoline pumps. Each rack is loaded to capacity but can be turned to permit spraying both sides of parts when it passes through water-wash spray booth.

# Pumps . . .

**BY E. J. FRUNDEL**
Drying Systems, Inc.

possible a durable lasting finish. Bonderizing, a rust-proofing and paint-holding coating, not only provides an adhesive base for the enamel, but prevents the spread of rust around accidental scratches in the finish. It is said to increase finish efficiency from three to five times in comparison to a finish over bare metal. Preparatory operations, performed to enable the baked enamel finish to withstand the severe service to which this type of equipment is exposed, are as follows:

a) Mild alkali dip.
b) Boiling water dip.
c) Bonderite (rust-proof) dip.
d) Boiling water dip.
e) Chromic acid dip.
f) Air blow-off.

**This new installation includes metal cleaning, bonderizing (rust proofing), conveyors, spray finishing in water-wash booths, baking in gas-fired indirect-heater type ovens, passage through a cooling zone, unloading, final inspection.**

▼ ▼ ▼

### Spraying and Baking Prime and Finish Coats

Following this preparatory set-up, the parts are ready for the finishing operations:

The continuous monorail conveyor, which has an assortment of hooks and carriers (each being especially designed to carry the different pump parts) is loaded as shown in Fig. 3.

Parts are conveyed through a 2-man water-wash spray booth where the prime coat is sprayed on. The operator can spray both sides of the work easily, by turn-

Fig. 3—General view of new installation, showing monorail conveyor in foreground.

ing the carrier, which is hung from a swivel hook. Paint that is over-sprayed is carried through a water curtain, which forms the back of the booth, and up through a series of water spray nozzles that remove all pigment from the atmosphere. This clean air passes through a set of eliminators, to eliminate the excess moisture, and is then discharged to the outside at a proper height above the roof of the building. Waste pigment settles to the bottom of the spray booth washer tank and is cleaned out regularly. In numerous cases, manufacturers reclaim this paint pigment for use again.

After leaving the prime coat spray booth the work enters a modern 5-lane oven (Fig. 2) which is heated by a "Dry-Sys" type "L" heater—a particularly efficient and durable type of indirect heater. This heater is equipped with the necessary gas burners and gas manifold, indicating controller for indicating and controlling the oven temperature (working in connection with a motorized control valve on the main gas line) and all safety devices, including an automatic push-botton safety control cabinet with spark-plug-ignited safety gas-pilot lights.

**Oven Operation**

Air is distributed to the oven by a system of supply ductwork designed to assure an even distribution of heat. Care was taken in designing this ductwork to prevent hot and cold spots in the oven. The baking temperature is constant throughout. An exhaust fan and exhaust ductwork at the entering end of the oven discharge all paint fumes to the outside of the building. There is also a system of recirculating ductwork designed to retain the heated air from the oven and transmit it back to the heater. By doing this a considerable amount of fuel is saved. The prime coat is baked at a temperature of 350°F. for one hour.

Leaving the oven the work travels through a cooling zone (Fig. 1) after which it is wet sanded, inspected and returned to the starting or loading point where the primed parts are unloaded and stored.

The prime coat cycle operates in a period of 2¼ hours, with sufficient time allowed for unloading and storing the parts, and for changing the heat temperature in the oven.

After the prime coat cycle is completed, the stored primed parts are loaded on the conveyor and sent through the same 2-man water-wash spray booth, where this time a finish coat of "Dura-Mirro" is applied. Coated parts again enter the oven and are baked for one hour at a temperature of 280°F. Upon leaving the oven, the finished parts pass through the cooling zone, unloading zone and inspection zone. Then they are assembled, crated and made ready for shipment. The finish coat cycle operates in a period of four hours, with sufficient time allowed to unload, assemble and crate material.

**Main Features and Merits of This Installation**

The demands of modern production in this metal cleaning and finishing department have presented certain problems which have been solved satisfactorily and economically. For example:

*1) Quality of output.* The qual-

ity of the work finished with the "Bennett Dura-Mirro" is characterized by maximum adherence, exceptional durability, and permanently lustrous beauty.

*2) Safety.* a) A sufficient volume of air is supplied for proper ventilation, reducing vapors from building up in the oven which would cause an explosive mixture. b) Fully equipped heating equipment with safety devices of all descriptions, make the installation foolproof, as well as complying with all requirements of the fire insurance underwriters, such as fan, electric, gas or pilot-light failure, and a limit switch for limiting excessive heater delivery —all working in connection with a magnetic safety valve located on the main gas line which would shut off the gas supply to the burners upon failure of any of the above mentioned safety devices.

*3) Reliability.* The cast-iron heater tubes of the Type "L" heater will never burn out during the life of the installation unless on a very rare occasion, which might occur through continued carelessness of the operator who is instructed thoroughly by competent engineers in the operation of equipment upon completion of installation. Replacements can be installed in a few hours time.

*4) Flexibility, or overload capacity.* With a fan-ventilated, indirect air-heated oven, should the occasion arise, the heater can be forced, the fan can be speeded up, the gas pressure can be increased, and the conveyor speed can be increased.

*5) Control.* This oven-heating system is equipped with an indicating controller which indicates as well as controls the desired oven temperature, working in connection with a motorized control valve on the gas line, thereby assuring automatic control of oven temperature at all times. This instrument is simple, accurate and can be easily reset to any desired temperature within its range.

## Selecting the Right Colors for Your Home

What your home will look like, outside and inside, in different color schemes, is graphically portrayed in 16 full color pages 10x8-in., bound in booklet form and sent out by E. I. duPont deNemours & Co., Wilmington, Dela. Color specifications are given so that the rooms in your home and the furniture therein can be painted according to the color scheme you prefer. Two pages of color chips are also shown, along with valuable charts and information about the painting, finishing and decoration of walls, woodwork, floor coverings, metal work and furniture.

## Billings-Chapin Co. Business Purchased by Glidden Co.

The Glidden Co., Cleveland, Ohio, announces the purchase of the going business of the Billings-Chapin Co., founded in Cleveland by the late Nathaniel D. Chapin in 1879. The purchase includes inventories, accounts receivable, trademarks, brands, formulas and good-will together with the right to use the Billings-Chapin Co. name.

A Billings-Chapin Division will be established by the Glidden Co. to handle and develop the trade. This division will be in direct charge of Mr. Ralph Bennett, President of the Billings-Chapin Co. for the past year.

Inasmuch as the purchase did not include the plant and equipment of the Billings-Chapin Co., the manufacture of the Billings-Chapin line of paints and varnishes was immediately transferred to the Glidden plants.

The recognized high quality of Billings-Chapin products will be maintained, and the Billings-Chapin products will continue to be marketed under the same brand names and labels as heretofore.

The broker in the transaction was Smead & Small, Inc.

# How to Use Wood Filler

BY O. R. MYERS

**How to use quick-drying fillers; what to thin fillers with, where to look for the cause of shrinkage, why I prefer to spray filler, how to mix filler for spraying; keeping filler stirred in a tank; adjusting filler to nature of wood being filled; wiping, padding and cleaning off all the surplus filler.**

IN MY 34 YEARS of experience in finishing pianos, phonograph and radio cabinets, etc., I believe I have used all types of wood fillers—those that r e q u i r e 24 hours of air-drying or an overnight drying in the dry kiln, one-hour air-drying, etc. Now I am using, and have used for the past three years, a filler that we cut with a 50/50 mixture of V. M. & P. naphtha and oleum spirits—or it can be cut with V. M. & P. naphtha alone.

This filler dries for sealing in 45 minutes to one hour. It fills satisfactorily, c l e a n s perfectly, and dries with minimum shrinkage. Some of the one-hour and 4-hour fillers sold today fill all right, but they do not wipe clean from the surface of the wood; they leave a blurred appearance which shows up after the finish coats are applied. Such fillers can and should be improved for final cleaning properties.

**Quick-Drying Fillers**

Quick-drying fillers are sure to be used more extensively as more superintendents and foremen finishers become better acquainted with them and begin to realize their advantages in the possible saving of time and floor space. These quick-drying f i l l e r s are sometimes blamed for shrinkage when in reality it is the wood that has shrunk. In some instances the woods used have a moisture content that is above the 7% which is considered average for furniture, cabinets, etc.

Many manufacturers buy dimension stock, and have no way of knowing whether the wood has 5% or 20% moisture content. The dimension stock may have been well kiln dried when it was machined and packed at the mill, but even when tightly wrapped and packed in crates it will take on moisture in transit, during humid weather. Of course, I do not deny the fact that some fillers shrink badly.

Often I have heard this question asked: "How can a quick-drying filler be used on grand piano tops or other large pieces like that?" I can not think of a piece of work that could not be filled with such a filler, but one

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# ORIENTAL WOODS & SWEDISH MAHOGANY

These beautiful colors are the latest creations of our Finishing Laboratory. They will be displayed at the coming Furniture Exhibitions, and are destined to be among the most popular light colors for the coming season.

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"S. Q." Gilco 2-in-1 Odorless Wood Bleach is used. Then, a "S. Q." bleaching lacquer and our newly developed stains and fillers. The finishing materials may be either lacquer or very pale varnish, such as "S. Q." LV-541. Write for information.

Practical co-operation by experienced service men and finishing engineers is offered to those who will submit their finishing problems to us.

## THE GILBERT SPRUANCE CO.

Specialists in the manufacture of Wood and Metal Finishing Products

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PHILADELPHIA, PA.

man could not do it alone; it would perhaps require two or more men working at the same time on the same piece.

### Why I Prefer to Spray Filler

The ideal way to apply filler is to spray it. I know many finishers, superintendents of factories, etc., who positively turn down the idea of spraying filler, but I have successfully sprayed fillers as far back as in 1927. Filler for spraying should be cut in about the proportion of 6½ to 7½-lbs. of paste filler to one gallon of V. M. & P. naphtha. If this sprayed filler drys too rapidly it can be retarded with slower-drying petroleum naphtha.

The reason for less filler per gallon of solvent is that the solvent evaporates rapidly between the gun and the surfaces being sprayed, thus leaving a coating of filler about as heavy as a brush coat cut with twice the amount of filler per gallon of solvent.

All filler should be padded in at once while it is wet — immediately after spraying — as filler will not flow into the bottoms of all pores in the wood. Neither will a brush work it into all of the pores. When the filler is brushed, some areas will be heavily coated while others will be thinly coated or dry, whereas with spraying, every part is covered evenly.

Filler should be sprayed from a pressure tank equipped with a mechanical agitator — preferably one driven by an air-driven motor which is safer as to fire hazard than an electric drive; also, it is simple and durable. With such an agitator operating within the tank, the filler will be kept in perfect suspension—and every piece of filled work will be the same. It is what you want—uniformity.

### Adjusting Filler to Different Kinds of Work

Filler should be adjusted to the kind of wood being finished. If the wood is a coarse open-grain type, the filler should be somewhat heavier than for the finer grained woods. If the wood surfaces have been wash-coated with a thin shellac or sealer, the filler will dry more slowly or stay "open" longer than on wood that has not been coated. The usual wash coat is a thin coat of shellac—about one part of "3½-lb. cut" white shellac to eight parts of alcohol—applied after staining and allowed to dry one hour. Then the surfaces are ready to be sanded and filled. This is one sure way to hold a clear color and get a good filling job, especially on mahogany.

A great deal of finishing trouble can be avoided by careful filling. Fill the pores flush, as much as possible; see that all pores are filled, and that the wood surface is free from streaks; make sure that all inside corners and routings are clean.

Filler can be too heavy as well as too thin, causing pinholes — which are more common in mahogany, but possible in any wood of an open-grain type.

### Wiping, Padding and Cleaning

The wiping, padding and cleaning of a filled surface is really important. The preliminary coarse wiping and padding of the freshly applied filler should be done across the grain of open-grained woods. Sprayed filler should be rough-wiped immediately after

*(Continued on page 32)*

# Don't Let Your FINISHING ROOM Be a Bottle-Neck

Finishing processes that take a long time to complete are going out-of-date. With modern industrial finishes, processes that formerly took days can often be done in hours... those that took hours, in minutes. This means more rapid production and fewer rejects due to dust spots.

Maas & Waldstein, specialists in finishes for products turned out in quantity, are leaders in the development of modern, "speed-up" finishes. The ideal of both the M&W research staff and M&W field representatives is to "fit the finish to the manufacturing process."

If your finishing room is a bottle-neck, let M&W study your problem and suggest a remedy. A letter will place an M&W finishing engineer at your service.

**Maas and Waldstein Co. Newark, N. J.**

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LACQUERS **PIONEERS IN PROTECTION** ENAMELS

# *They said:*

# "It can't

With his thumbs in the armholes of his vest, someone in every business says, "It can't be done!" to every new and different way of doing things. He is blood brother of the fellow who told Orville Wright it could not be done. An ancestor of his snickered at Robert Fulton, and a distant relative declared that rayon was a transient fad.

Frankly, it would not have surprised us if we had met many people like this when Polymerin was announced. Because Polymerin really is an amazing product—unlike anything else.

Polymerin brings new standards to industrial finishing. It lengthens the life of products finished with its tough, adhesive surface protection. It permits production schedules heretofore considered impossible. It lowers finishing costs through more efficient procedure and a saving of time.

To compare Polymerin with other industrial finishes is a tough job. And "tough" is the right word to use for Polymerin. To demonstrate how tough it is we ask two men to grasp washing machine legs in the manner of baseball bats, and slam them together as hard as they dare. Result? No effect on Polymerin! No scratches, dents (except in the metal underneath), mars, chips—the same hard, flexible, porcelain-like finish as before.

How was such a startlingly different finish developed? Just tinkering with existing materials could not have produced it. Polymerin is a product of Interrelated Research.

We asked this question, "If the industrial finishers of the country could write their own ticket, what kind of an industrial finish would they consider ideal?"

The answer was something like this: "Give us an industrial finish that can be processed with all the speed of lacquers but which still has those desirable qualities of synthetic resin finishes."

We put this up to The Research Laboratories of Interchemical Corporation, whose interrelated businesses bring them in close touch with all kinds of chemical coating problems. The answer was Polymerin.

Up to that moment the industry had said, "It can't be done!" When we announced the answer, Polymerin, there were still some skeptics who said, "It can't be done!"

Here are the facts about what has happened since then.

Polymerin was introduced over a year ago. Since that time it has replaced old-type finishes entirely in scores of large production plants. One

# *The answer is*

# be done!"

of the best known washing machine manufacturers has used Polymerin for more than a year and has gone over completely to Polymerin for its washing machines and other appliances. A manufacturer of electrical appliances whose brand name is a household word has completed weeks of exhaustive tests and is about to equip its large plant for the maximum speed of production Polymerin affords.

In the cosmetic field, producers of fine toiletry containers (such as compacts and lipsticks) have adopted Polymerin for their beautiful merchandise.

In stove building plants, Polymerin, with its unusual heat resistance, its resistance to chipping, and its ease of application, has reduced finishing costs as much as $100.00 a day.

New names are being added rapidly to the list of manufacturers who have gone over completely to Polymerin for their industrial finishing—manufacturers of lamps, hardware, home laundry equipment, metal furniture, service station standards, office equipment, undersink cabinets, shower stalls, coated wire, vending machines, electrical appliances, toys, coolers, bicycles, scales, boiler jackets and other products.

Remember, Polymerin employs a unique chemical principle which accounts for its tough, unusually flexible film, and yet it permits amazing production schedules. Polymerin's beautiful finish has been compared to porcelain itself.

If the industrial finish you are now using does not measure up to Polymerin's remarkable characteristics, write, phone or wire immediately for a representative of Ault & Wiborg Corporation to survey your finishing problems.

## *Write for This Brochure*

To manufacturers using industrial finishes, we shall be glad to send a copy of the brochure, "The Answer Is POLYMERIN." It describes in detail the advantages of POLYMERIN and the interrelated research through which it was developed. A note on your company letterhead will bring you this booklet at once, without obligation. Why not send for it today? Address Dept. I. F. N.

AULT & WIBORG CORPORATION
SUBSIDIARY OF INTERCHEMICAL CORPORATION
Dept. I. F. N. — 77 Varick Street, New York City

# POLYMERIN

REG. U.S. PAT. OFF.

*The Original High-heat, Short-bake Finish*

Patents Pending

application; brushed filler should be wiped as soon as the surface starts to become dull.

Next comes the padding, the workman using a pad made by folding enough cloth (such as washed medium-weight ticking or similar cloth) to fit the hand. The face of this pad is "filled" by rough-wiping enough of the freshly filled wood surface to give the folded cloth a thick coating.

Several materials are used by different finishers for rough-wiping the filler, for example, fine excelsior called "wood wool," sea grass, tow, medium weight burlap, and a material made of cocoanut fiber. This rough-wiping is then followed by a final cleaning with rags. I have found that rags, such as medium-weight washed ticking are best for rough-wiping, padding and fine cleaning—omitting the use of all other wiping materials.

A soft wood block, about 1½x3x4-in., faced with a piece of thin felt which, in turn, is then covered with soft shoe leather tacked around the edges of the block, makes a good pad.

After padding, wipe the surface carefully with the grain, using clean rags. Use a wood pick sharpened like a pencil to clean excess filler from inside corners, routings, etc. Birch or maple dowels ⅜-in. in diameter make the best picks. A 2-row or 4-row plating brush or scrubber is very useful to clean the moldings of close-grained woods. However, you should never allow the brush to touch open-grained woods after they have been filled, as the brush bristles will remove filler from the pores in the wood, as well as from the inside corners.

Glue causes trouble where veneers are thin and sanded close to produce a smooth surface. The glue that has been forced deeply into the pores of veneer, on the underside, is cut into, exposing some pores filled with glue. This makes it hard to fill with regular filler and it is a cause of gray showing in the pores.

In some factories filling is passed off as unimportant, but watch your filling; see that it is done properly with good material, and you will save your firm money, and put a feather in your cap instead of a headache.

---

## Falstrom Industrial Ovens, Driers

Industrial ovens for baking finish coatings on metal parts and products are illustrated and briefly described in a 4-page bulletin sent out by the Falstrom Co., Passaic, N. J. Batch type and continuous-conveyor ovens heated by gas, steam and electricity are included. Features played up: 1) Positive heat placement; 2) minimum heat loss; 3) heat conservation; 4) proper pressure differentials; 5) sturdy panel construction; 6) improved door-closing mechanism.

---

## Vapor Cleaner Bulletin

The Magnus Chemical Co., Inc., (cleaning materials) Garwood, N. J., has just issued a new descriptive folder on its new product, Magnus Vapor Cleaner . . . . "made to give the greatest effectiveness and speed to steam or vapor cleaning, combining the principles of soap washing with solvent cleaning. The combination of the two results in faster and more thorough cutting action than is found when either is used alone."

This new product is offered in two grades—Magnus 92-E for light duty cleaning; Magnus 94-E for heavy duty cleaning. Both are light brown pastes, quickly and readily soluble in water. They impart to the water a wetting, pentrative and solvent effect beyond that of any soap or alkali.

Magnus Vapor Cleaner is guaranteed to function satisfactorily in any make of steam or vapor cleaning machine.

THE PREPARATION FOR AND APPLICATION OF DURABLE AND DECORATIVE COATINGS ON

# *Masonite Presdwood—II*

**Second and final installment of a practical article about finishing Masonite Presdwood surfaces for interior and exterior service . . . followed by valuable suggestions and comments submitted by the Chief Engineer of Masonite Corp.**

**BY G. L. HARDY**

WHEN OR IF it is desired to obtain a glassy-smooth finish, free from all pebble and wave effects characteristic of Masonite Presdwood, an oil-base primer-surfacer may be used for the entire filling operation—if time is not of major importance. Or, just spray a wet cross coat of this short-oil filler, and follow, when dry, with as many coats of lacquer surfacer as are needed to give the necessary fast-dry filling. A lacquer-resisting surfacer must be used if followed directly by pyroxylin lacquer applications.

If production is large enough, it is well to give the entire sheet stock a generous machine sanding. My preference in power sanders would be either the electric continuous belt or the reciprocal-stroke type of sander. I cannot conceive where a rotary disc sander would do anything but aggravate the natural wavy effect of the Masonite Presdwood, although it would remove a great deal of the pebble effect which is always found in this wood composition. Sufficient pressure must be exerted on the sanding machine so that the panel never arches or "bellies" up from the bench. The panel must stay flat on the bench top so that the cutting of the pebble and wavy effects will be level. Power sanding at this point will eliminate much of the expensive hand block sanding operations on the filler coats.

### Prime Coating

My favorite prime coater is the old stand-by—silex and sugar of lead—a short-oil mixture that seems to have been forgotten by many of the late painters. This type of material has long been on the market and is a good formulation proved over many years. It penetrates wood and fiber compositions perfectly, anchors thoroughly to steel, galvanized iron, etc. It locks the grain of wood and wood fiber nap so that they do not rise from further applications, which is not always true of clear rezyl or heat-bodied oil sealers. The transparent pigments act as a colorless or natural filler.

If it is short enough in oil, this type of primer-sealer will take

lacquer directly over it—if the first two applications are sprayed on smoothly about 20 minutes apart — when employed directly on metal. Over wood, where it has deeply penetrated, the lacquer may be loaded on from the start. Another merit of this silex-oil-primer is that it may be tinted with lead-free pigments, using from 2 to 4-oz. of tinting color per gallon. For aluminum, use 4-oz. per gallon. By using tinting colors you have added a base color coat operation all in the one application.

**Armor Coat Finish**

It will be well to remember that a surface being painted is really being encased in armor, the purpose of which is to repel the ravages of weather and protect the entire surface that is covered. If the armor coat is weak in durability or resistance, all of the dress-up value of attractive painting is lost. It is far cheaper to protect this decorative value from the start by using foundations of properly-applied proven-merit products. Poor base coatings on wood-fiber composition soon lead to the destructive presence of dry rot or fungus growth—where the presence of excessive moisture is occasionally encountered. Unless this attacking agent is checked in time, it will mean that an entire new panel or section must be installed. Then follows expensive touch-up costs.

For untreated Masonite Presdwood, the straight factory mixture of these silica primers may contain so much pigment that the suction of the first coat of paint or enamel might be excessive and cause flat spots to appear. To avoid this, always add from ¼ to ½-pint of pure boiled linseed oil to the gallon of primer, and use only pure turpentine or slow-drying mineral spirits, so that surface sealing of the primer will not take place and cause improper or partial penetration. These types of reducers also apply for the correct reduction for the tempered Masonite Presdwood.

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*Editor's Note: The following comments, revealing additional and authentic information about Masonite Presdwood and the correct finishing of same, were prepared by Mr. R. T. Miller, Chief Engineer of the Masonite Corp., after he had made an examination of the foregoing article.*

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1. The composition of this material is exploded wood fiber which, up until the time of tempering, contains no artificial binders, fillers, or other chemicals. The fiber is felted in water into a wet soggy mass, and then pressed in heated, flatbed, hydraulic presses, the pressure and temperature transposing the lignin or natural wood binder into a form of resin which actually weld the fibers together.

2. In some applications it may be desirable to back prime the board and edges. However, a very large portion of our material is used without this being done. While we do not recommend leaving raw exposed edges unfinished, still where the joints are covered it is not imperative that this be done.

*(Continued on page 39)*

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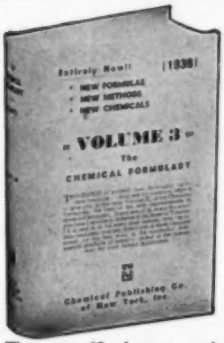


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**3.** Regarding the backing of either primer or finish, it is absolutely essential that the board be reconditioned as to moisture content prior to its application and use, for it to stay straight. It is a characteristic of this product that it will remain flat with either 2%, 5% or 10% moisture content, as long as the moisture content is equally distributed through the board. However, should you have 5% moisture content around the edges, and a 2% moisture content in the center of the board, I believe you can understand what would take place.

The moisture equilibrium point at 40% to 50% relative humidity is approximately 4½% to 5%, and should the board be baked for a sufficient length of time to remove the initial moisture content, it is necessary to recondition the board to bring it back to this moisture content.

We have definitely proven that where the board is thoroughly moistened, or the moisture content of the board is brought up to 6½% or 7% prior to application, and installed while still in a moist condition, that it will not warp. Further, if the board is applied with approximately 2% to 3% moisture content, it is only a question of time (irrespective of the number of coats of paint on the face, back, or edges) until it will equalize with the humidity, so that paint is not the cure to prevent warping.

**4.** Regarding the fungus growth, this material (Masonite Presdwood) is somewhat different than wood in that many of the ingredients, sugars, etc., such as solubles, have been removed in our manufacturing process. Also, these boards are manufactured at temperatures far and above what any fungus or bacterial life could live in. The materials are absolutely sterile at the time they are shipped from our plant.

**5.** I will agree with the writer (Mr. G. L. Hardy) that proper sealers or surfacers, as the case may be, are desirable, and to this end we have prepared what we call an approved list for interior and exterior use, copy of which is attached.* However, it would be our thought that the treatment outlined in this article applies primarily to the use of our products for exterior work, as I know finishes applied for interior work that are not so expensive and do not require as much time.

**6.** It has been our experience that the primers satisfactory for our products are not satisfactory on metal, nor are metal primers satisfactory on our board.—R. T. MILLER, Chief Engineer, MASONITE CORP.

*The Masonite Corporation's copy of recommended sealers, primers or surfacers for plain or tempered Presdwood includes products of 15 different manufacturers, many of whom advertise their materials in INDUSTRIAL FINISHING.

## Zinc Die Casting Booklets

Two interesting and informative illustrated booklets, "Zinc Alloy Die Castings in Hardware" and "Zinc Alloy Die Castings in Industrial Equipment" have been prepared for distribution to the trade by the New Jersey Zinc Co., 160 Front St., New York, N. Y. Excellent illustrations of hundreds of handsome products made of zinc die castings are shown in the booklets. Copies are free to those who write for them.

# Safe Metal Cleaning

BY MICHAEL FORCHIONE

**If your metal cleaning operations cost too much in materials, time or labor, or if they are troublesome, ineffective or hazardous, you have a problem that can be easily solved. Other concerns are doing the job economically, satisfactorily, safely and profitably.**

★

CLEANING is easily the most important operation in metal finishing because if any surface of the manufactured product is improperly cleaned and later painted, the result will be disastrous.

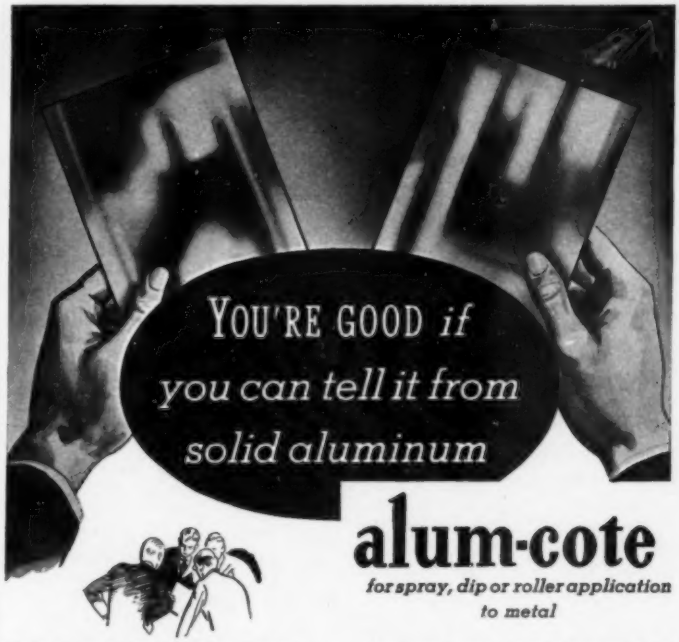
When a coat of finishing material is applied to a surface that is oily or greasy, the paint will have poor adhesion. It may flake, blister, crack or rub off easily. Also, when a finish is applied to an oily metal surface it has a tendency to crawl. In many cases the finish will look spotty—glossy in some spots and dull in others.

Care must be taken to make sure that any oil or grease which may be in the crevices or seams of the metal is forced out. Otherwise, when the metal is painted and baked, the oven heat will force out the oil, thus spoiling the piece. When this happens the whole finishing production schedule is thrown out of order, causing delays and adding extra cost to that particular job. In these days of keen competition and close profit figuring, the entire profit can be entirely wiped out by improper cleaning.

### Naphtha for Cleaning

If naphtha or some similar cleaning agent is used, it is always best to burn it off afterwards. By "burning off" I mean to put the cleaned piece into an oven prior to painting and bake it for at least one hour at 250°F. This will drive out all oil and grease from the crevices and places where the metal is spot welded. After the burning operation the metal should be thoroughly dusted and tack-ragged before spraying.

I take it for granted that all rust or scale will be removed before painting. When naphtha is used it is practical, whenever the articles to be finished permit, to use dip cleaning tanks. The tanks can be made to fit your own requirements—according to the size of the products to be cleaned. A naphtha cleaning tank should be fitted with a self-closing cover

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that will close automatically in case of fire. The cover can be made to slide or swing shut, being held in open position by a cable or chain that has a fusible link.

For cleaning small batches of small articles, I suggest using a 5-gallon container that is fitted with a safety lid.

While I have mentioned naphtha as a cleaning fluid, there are many other solvents that can be used; for example, gasoline, mineral spirits, lacquer thinner, butanol, etc. However, in using any of these materials, the fire hazard is always present and proper precautions should be taken in the interest of safety.

### Degreasers Used More Extensively

Since most plants are now being completely modernized by the installation of conveyors and straight-line production systems, the use of highly inflammable cleaning materials is falling off. In their place modern degreasors are being put in. These degreasers can handle more work and do it much more efficiently and safely, producing a better surface for the finish.

Inasmuch as no two companies have exactly the same production conditions and cleaning problems, due to the great variety of products manufactured, it is often necessary or desirable for each company to have degreasing units made especially to suit its own specific requirements.

Several types of degreasers are on the market. Some of them require rinsing tanks; others clean by vapor. The vapor type degreaser is operated by bringing to a boil a chemical cleaning solution in the tank. These cleaning chemicals have a low boiling point. The work to be degreased is held suspended over the tank and the vapor does the cleaning. Modern degreasing units speed-up production and cut down fire hazards.

Tanks containing cleaning compound should be cleaned periodically to remove the grease and sludge that settles to the bottom. When the chemical solution becomes loaded with grease so that its cleaning qualities are impaired, it is distilled (cleaned) and used again.

Many firms are engaged in the manufacture of products on which a rust-proofing operation is desirable or necessary. This operation is important, especially with concerns that take pride in producing a durable line of goods. Rust-proofing tanks can be built to fit in with the metal cleaning conveyor lines and can be operated at a small cost.

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## Rowe Paint Co.'s Correct Address

The published news item in October issue, page 57, gave an incorrect number on Jackson Ave., Long Island City, N. Y., as the new address of Rowe Paint Co. The correct number is 11-10 Jackson Ave.

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## Lawrence-McFadden Co. Adds Two Salesmen

The Lawrence-McFadden Co. announces that Mr. J. H. Pratt of Martinsville, Va., and Mr. W. H. Davis of High Point, N. C., have joined the company's sales force. Mr. Pratt will travel Virginia and Tennessee. Mr. Davis will travel North and South Carolina and Georgia. Both men are experienced and thoroughly familiar with finishing problems.

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## Mexican Style Furniture

We have been hearing considerable of late about the increasing style trend toward the use of Mexican furniture. Following your paper as closely as we do we have not noticed any editorial reflection of this trend and just wondered if you had any immediately available information or statistical data which would show us the relative importance of this trend.

As we understand it, it has been mostly limited to dinette sets, sun room furniture, and other "auxiliary room" requirements.

Whatever information you have available will be sincerely appreciated.—A. A. Co.

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The type or style of so-called Mexican furniture that has become popular in the U. S. A., and which lends itself to factory production really originated in Spain and was brought to Mexico over 200 years ago. However, the Mexicans have added their own peculiar touch. Really this furniture finds a more descriptive title in "Early Californian," for it was

# Questions Answers

inspired by incidents and the life of early California. It is styled along the lines of effusion between Mexican craftsmanship and basic Spanish provincial styles. It is fairly simplified in construction in which hard, durable woods suitable to finishing are employed.

Foremost designers of this development modeled and aged the furniture by the most improved methods to fulfill a California demand for home furnishings which combine the atmosphere of the old with the conveniences of the new. Made in the traditional style of old California, this type furniture will fit right into the newest homes to flavor 1939 with history and tradition.

Fashioned by artists, and to a great extent hand-made, this furniture is antiqued and smoothed down to give it a genuine aged

**A smartly designed Coronado set made of hard maple and expertly antiqued. Cross bars are delicately decorated and wrapped where they join posts. Photo, courtesy of Los Angeles Furniture Mart.**

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appearance, decorated in the celebrated style and taste of California. With its fiesta coloring, handsome wrought iron for strength and beauty, delicate shading that only the Yucca wood

A breakfast set; floral decorations in color appear on chair backs and on the X-legs of table and bench. Photograph courtesy Los Angeles Furniture Mart.

finish can give, and fiber wrappings that are reminiscent of raw hide lacing, we have some of the finest furniture that has ever been produced—the result of a combination of practical workmanship and artistic inspiration drawn from the colorful past.

Early Californian furniture is easy to live with for it is relaxing, consequently it has found favor in all parts of the United States. Major stores in such cities as New York, Philadelphia, Detroit and many others devote large sections of furniture departments to the display of this vigorous and lively style; they feature the furniture as an important part of their merchandising campaigns, for their experience has proved that it has much appeal to the home maker and is being widely used, exemplifying up-to-the-minute living.

The line has been so developed that it is now possible to furnish entire homes in Early Californian furniture. The same theme can be cleverly carried throughout the house. Accessories, too, are made in the same style, to blend perfectly with the furniture.

The manufacturing of Early Californian furniture, is a major part of the manufacturing industry in Los Angeles, for it is here that thousands of dealers come to buy this style with individuality and authenticity of design.—KATHRYN ERICKSON, Los Angeles Furniture Mart.

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A furniture manufacturer in Illinois says: "As a result of the recent interest shown in Mexican motifs, such as the new 'Fiesta' wall paper illustrated recently in 'Life' magazine, as well as new patterns in china and linens, we feel that our colorful Mexican Modern furniture will be more in demand this fall than ever before."—ROSALIE FLANK, American Furniture Mart.

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## Force Dry Finish, Birch Furniture

We are very much interested in finding a color finishing system that can be used on birch furniture—one that could be baked (to the extent that wooden furniture can be baked) and that would finish up in a tough semi-gloss finish elastic enough to "give" with minor bumps rather than crack and chip.

The colors should be as fast as possible. Our furniture is made of glued-up solid birch and plywood panels with birch facings. The baking temperature, therefore, should be kept low enough to avoid damaging the glued-up parts. This might make a high-

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temperature drying-room system more advisable than a low-temperature baking system.

We plan on setting up new finishing department, therefore we will not be affected by any existing equipment. If we could find a satisfactory finishing system, we would coordinate the new finishing room and its equipment to serve this system.

What we are mainly interested in is a high quality semi-gloss color finishing system, with a short artificially controlled drying time.—O. W. CORP.

---

While attempts have been made from time to time to produce an acceptable furniture finish in a baking type of material, it has not been done extensively. However, I see no reason why you should encounter any great difficulty.

The exact temperature to which fabricated wood structures may be subjected with safety is a question. Probably the safest rule is, "the lower, the better." I have experimented with baking finishes for wood which required a temperature of 140°F. for one hour. While it might be satisfactory, it is generally conceded that this is too hot for fabricated woodwork. I believe that 125°F. for two hours is safer.

It is possible to produce a good finish with two coats. There are various advantages in the addition of a third, or even a fourth, which would be governed by the cost factor.

Suppose we consider the 2-coat system, of which I am sending you three small samples. A coat of a white surfacer was applied and force-dried for 1½ hours at 125°F. It was dry sanded with No. 320 abrasive paper. A spray coat of the top-coat enamel was then applied and given about the same drying treatment. When cool, the finish is much as you see on the samples. The entire elapsed schedule required about four hours, which would be a minimum. This finish has a high degree of chip resistance, durability and resistance to moisture.

The addition of a clear coat as a preliminary seal would have given some advantage, although it would not take the place of the surfacer in the matter of concealing the wood grain. The principal advantage of the preliminary sealing is to provide insurance against cutting through to the raw wood in sanding, thus creating a suction spot which would show the grain in the final finish. Contrarily, the cohesion between a clear first coat and the surfacer is sometimes not as good as that of the surfacer directly to the bare wood. A fine (preferably wet) sanding of this top coat, followed by a second slightly thinner coating would produce a splendid surface.

Perhaps the best way to use a third coat would be to apply a first coat of the surfacer, but make it very thin, allowing the penetration to carry some of the pigment into the pores. When dry, this would be followed by a regular heavy coat, which would then be subjected to a thorough sanding.

Please understand that the samples and system mentioned represent the minimum in labor and material for this type of finish. The ultimate actual fineness and quality of finish will depend directly upon the amount of labor

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EGYPTIAN FINISHES

permissible in the application and smoothing of the undercoats. The system shown here calls for two sprayings, two bakings and one sanding. I recommend that, since you stress flexibility and chip resistance, you keep the entire finish as close to the wood as possible. The surfacer should be sanded quite close to the wood.

Specific recommendations, based on the materials shown on the samples, would be as follows: (These are actually air-dry materials which will dry in two to four hours under normal conditions, but which may be force-dried, the surfacer up to 150°F., the enamel up to 275°F.)

**Two-Coat System—Minimum**

Spray coat of surfacer; flash for 5 to 10 minutes, and force dry at 125°F. for 1½ to 2 hours. Cool and sand (dry or with water) with No. 320 abrasive paper to a perfect surface. Spray one coat of top-coat enamel; flash for five minutes and force for 1½ to 2 hours at 125°F.

**Three-Coat System**

Spray a very thin coat of surfacer, reduce about one part of surfacer to two of thinner. Force-dry as just mentioned. Spray a full heavy coat of surfacer and dry again. Sand; apply and force-dry an enamel coat.

**Three-Coat System (Alternative)**

Apply surfacer as described for the 2-coat system, followed by the enamel coat. Wet-sand the enamel coat with No. 320 waterproof paper. Apply a second enamel coat of a thinner consistency and force-dry as before.

As for drying equipment, almost any good industrial oven will suffice. A customer of ours, a furniture manufacturer, uses a progressive drier . . . . which is a very interesting piece of equipment and has been used with entire success for years. — W. T. SMITH.

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## Letters from I.F. Readers

*(Continued from page 8)*

adapted to our work. We will appreciate it greatly if you will send us a few sample copies of your magazine and advise us as to what the subscription rate is per copy or per year.—I. L. Co. (Hardwood Flooring).

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## Laboratory Top Finish

On page 5 of your July, 1938 issue, there was an inquiry from A. R. Mfg. Co. for a laboratory table top finish or composition. This was called to my attention by our superintendent, as this is one of the materials we make besides paints and enamels for our own use. "Rezilite" has been used in most of the laboratories throughout the world for floors, tables and counter tops.—Rezilite Mfg. Co.

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## Why Paint Peels

Having reviewed the October issue of INDUSTRIAL FINISHING, I noticed on page 27 a short note on "Why House Paints Peel," by duPont. This may be correct from the chemical composition of paints standpoint, but as several other things combine to cause blistering and peeling, I will give you several more which have been reaped from actual experience over a period of 15 years.

I have known people to specify one brand of paint from year to year, with good results, but at the end of 10 years, cracking and peeling was noticed in several places. This is caused from moisture collecting at the back of the siding, either from condensation or leaks above or near the affected areas. Houses without eaves give plenty of trouble in this way due to driving rains forcing moisture into cracks and small openings at the roof line. Caulking will do much to stop moisture entering at these points.

One of the best and most success-

# NO! PROFITS AREN'T THAT EASY

The fact is, profits are mighty elusive... mighty hard to capture... they simply will not fall into your lap!

But, we have a suggestion to offer that will help you corner more sales and therefore more profits. This isn't a cure-all like the patent medicine that solves all ills from dandruff to fallen arches... but it is a definite help.

You know the importance of "first impressions"! All right... what is the first impression of consumers when they look at your product? Does it reach out and grab attention because of its attractive appearance... or does it serve as a stooge for a smarter looking competitor to show up as a pug-ugly? A frequent check-up on this point is always worth while... it often leads to an improved finish that likewise improves sales.

We maintain a creative studio to help manufacturers keep products "up on their toes" with finishes that click. Write us about your product and we will tell you how we can serve you by creating a better sales-stimulating finish. There is no charge for our studio service to reputable firms.

## ROCKFORD VARNISH COMPANY

*Manufacturers of Finishing Materials*

ROCKFORD, ILLINOIS

ful ways to stop peeling, at a small additional cost, is to back-prime all exterior lumber before erection. One or two coats of aluminum paint give good results. This method seals all edges and joints from moisture and stops shrinkage in later years.

Any master painter who sells the back-priming idea to his customer, will obtain better results from his efforts as well as more business from the standpoint of labor and materials. Personally, I have used this idea for the past five years with very good results.—S. B. Supinger.

## Striping Tools

Any information you can give us about fountain pen stripers, for use with lacquer, would be greatly appreciated.—H. O. Co. (Wood Heels).

The names of several manufacturers of striping tools have been submitted to this inquirer.—Ed.

## Can Supply Metal Coated Sheets

On page 8 of your September issue we noticed a request for information about a source of supply on lacquered aluminum sheets. The letter was signed "M. D. Co." We are in the metal coating and lithographing business and would appreciate your advising the company that we are in position to handle a specification of the type that they are interested in.—Caspers Tin Plate Co.

## Padding Lacquer

On page 60 of January 1938 issue of INDUSTRIAL FINISHING, there is described an item (No. 142) known as "Padding Lacquer." We would like to secure four quarts of this material for one of our customers. Will you kindly advise us who to get in touch with in order to obtain this material, or, will you have the manufacturers ship us four quarts of it?—B. Paint Mfg. Co.

## Fluorescent Paint

The Continental Products Co. of Cleveland has referred us to your publication, INDUSTRIAL FINISHING, for information concerning manufacturers of fluorescent paint. We are interested in the application of and technical data concerning the use of fluorescent paint for outdoor signs, utilizing "black light." We would appreciate obtaining the names of the companies manufacturing fluorescent paints.—E. R. Public Service, Inc.

## Expanding Business Demands I. F.

We have come across your publication INDUSTRIAL FINISHING, and as we are expanding our business and making room for a spray booth for all types of wood and metal finishes, we would be pleased to receive this publication for our files.—K. B. Co. (Store Fixtures).

## Information Wanted About Synthetics

I am very much interested in any information concerning urea formaldehyde synthetics. Please advise me where I can find information, especially concerning tests on this material. Is there any other finish that you know of which more closely approaches porcelain?

Please send me by return mail the January, February, April, May and July 1938 copies of INDUSTRIAL FINISHING magazine.—C. C. O.

## Magnesium Composition Floor Material

Can you advise us where we can secure magnesium composition floor material and instructions for laying same?—N. S. B. Co. (Bee Keepers' Supplies).

## Hand-Agitated Lacquer Cans

We would be obliged if you could inform us who now manufactures the hand-agitated lacquer cans formerly made by Royal Vilas, Inc., of Easton, Bridgeport, Conn.—D. L. Co.

## Sheet Celluloid Covering

We want to learn something more about the wonderful finish that many American toilet seat manufacturers use. As far as we understand, the wood is covered with a sheet of cel-

luloid. Can you inform us if this is done by dipping process or by applying molded celluloid sheets over the wood and gluing these together? If we remember well we have read something about the manufacture of such toilet seats in a former issue of your magazine, and we would thank you for sending us, if possible, a copy of this issue at your convenience.—T. & Co., Rotterdam, Holland.

This company has been given the name and address of a manufacturer of sheet celluloid suitable for their work. The article they refer to is "Covering Surfaces with a Sheet Celluloid Finish," by W. C. Mingto, published in June 1938 issue, pages 25 and 26.—Ed.

## Quality Paint Brushes Wanted Abroad

A friend of mine in Lahore, India, is desirous of acquiring exclusive rights for India and Burma for the sale of paint brushes. He wants to obtain such a connection with the manufacturer of the type of brushes where the bristles generally do not continue coming out during the painting operations.

You probably have a record of the names of manufacturers of high grade paint brushes. I would like to contact a reputable house who may be interested in such exclusive representation in India, and I will be glad to enter into an agreement on behalf of my friend.

It occurred to me that you might insert this inquiry in the question and answer column of your esteemed publication. This will give the prospective manufacturer a chance to contact me through your column.—M. M. M.

## Glass Marking Ink

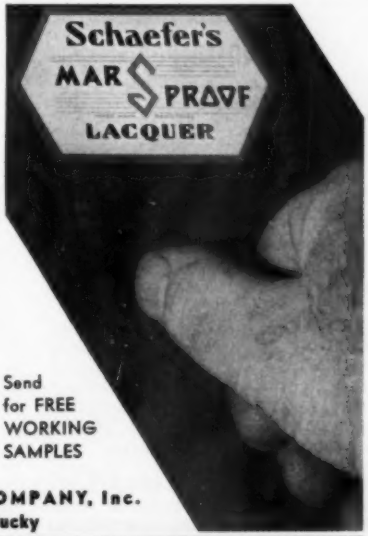
We would like to know the names of manufacturers of glass marking inks that can be applied with a rubber stamp and made permanent by heating. An item on this appears on page 20 of the August INDUSTRIAL FINISHING magazine.—Y. Mfg. Co. (Advertising Displays).

The manufacturer referred to in the August issue is, as stated in the article, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.—Ed.


**HERE it is!**

**cannot be marred or scratched**

A lacquer finish that cannot be marred or scratched with the thumbnail, or other destructive agencies — a much tougher piece of goods than the ordinary lacquers. It produces a splendid transparent finish of full depth on maple, walnut, gum, mahogany and other cabinet woods... It is made in either the Clear Gloss Rubbing or the Satin Finish. Mar Proof Lacquer Sealer is recommended for the first coat.

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**THE SCHAEFER VARNISH COMPANY, Inc.**
**Louisville — — Kentucky**

Kindly mention INDUSTRIAL FINISHING when writing advertisers

## Waterproofing of Fiber

In looking over some of the back numbers of INDUSTRIAL FINISHING, we find two articles on the waterproofing of fiber. On page 11 of the January 1938 issue, the S. R. Chemical Co., and on page 10 of the July 1938 issue, The Industrial Materials Co. offers something of this kind. Will you kindly have these concerns contact us, or furnish us with their addresses?—E. Furn. Co.

## Gyro Electric Sander

Please furnish details on the Gyro Electric Sander. (Your Sept. issue, page 52).

This inquiry has been referred to the manufacturer, Sterling Products Co., 2457 Woodward Ave., Detroit, Mich.—Ed.

## Tumbling Machines

We were wondering if you were in position to give us the names of companies who manufacture tumbling machines for polishing metal goods, other than the R—— Co.—O. C. Co.

## Snowflake Polish

At the present writing we are trying to locate a manufacturer of what is known as "Snowflake Polish." We understand this is a metal polish and we are desirous of knowing who the manufacturer is, so that we can contact them for samples and quotations.—G. F. Co. (Caskets).

**METALPREP**
*"Used First, Makes Your Paint Finish Last"*

METAL CABINET MFRS.: MAKE YOUR METAL SAFE FOR PAINT

Use Metalprep to clean and prepare all sheet metal surfaces before painting. Removes rust and grease.

*Write for Literature Today*

**Neilson Chemical Co.**
6564 BENSON ST. DETROIT, MICH.

## Polishing Compounds

We would appreciate it very much if you would send us a list of manufacturers of buffing and polishing compounds, the same as used by the automobile manufacturers for lacquer and synthetic finishes.—U. W. Co. (Special Woodwork).

## Modern Plastics — 304 Pages

The October catalog-directory issue of the monthly magazine Modern Plastics is a special issue containing a tremendous amount of uptodate practical and technical information and hundreds of illustrations, many of them in colors, relating to plastics. Price of this special issue is $2.00. The publishers are Breskin & Charlton Publishing Corp., 122 E. 42nd St., New York, N. Y.

## Fire-Fighting Exhibition

As part of its Fire Prevention Week program, the Newark, N. J., Safety Council sponsored a dramatic "fire circus" before an audience composed largely of engineers from New Jersey industries, on Oct. 13, 1938. The event took place on the proving grounds of the Pyrene Mfg. Co. in Newark.

The exhibition took the form of a demonstration of the efficacy of chemical fire extinguishers for conquering fires of every kind that might break out in an industrial plant. The "attractions" included fires in lumber piles, gasoline spills, buckets full of different kinds of flammable liquids, gasoline storage tanks, electrical equipment, dipping tanks, trucks, and broken gas mains.

Small flammable liquid and electrical fires were extinguished with the vaporizing-liquid type of extinguisher. A truck was soaked with gasoline inside and out, and the resulting blaze was subdued with foam. The effectiveness of an automatic carbon-dioxide protective system was demonstrated by spilling 40 gallons of gasoline inside a small building and throwing in a lighted torch; the moment the flames flared up, the doors and windows of the building slammed shut, and the interior was filled with fire-killing carbon dioxide gas.

The climax of the demonstration was a fire in an oil tank 30 feet in diameter. Flames rose hundreds of feet above the burning oil, but a stream of foam, flowing quietly over the surface of the oil, crowded the blaze over to a far corner and then snuffed it out.

# WOOD LACQUERS

There are no spectacular developments in wood lacquers. There is, however, the accumulation of years of testing and steady improvement resulting in our present line of gloss and flat lacquers developed for the wood working industries.

Where the maximum dollar value in solids and smooth-flowing solvents is required; where perfected resistance to cold-checking, abrasion, moisture, printing, beverages and light are desired, we shall be more than glad to submit samples for any desired test.

Within the comparatively narrow price range for this type of lacquer, we feel we can and do supply a material unsurpassed for its specific purpose.

**THE VARNISH PRODUCTS CO.**

5208 Harvard Avenue Cleveland, Ohio

## SILK SCREEN METHODS of REPRODUCTION

*Fully Illustrated by the Author. Leatherette Binding. Size 5x7½ in. 193 Pages. 98 Illus.* **$3.00**

THIS new book is intended for Sign Painters, Card Writers, Display Men, Furniture Manufacturers, Novelty Manufacturers, Glass Etchers and For Domestic Use.

Every detail of the silk screen process is presented clearly in detail. All equipment is fully described and its use illustrated. All materials needed in the various kinds of silk screen work are mentioned with respect to their use to advantage. Estimates of costs and prices to charge are given.

**Practical Publications, Inc.**

222 East Ohio Street Indianapolis, Ind.

## Metallic Rip-pl, One Coat

A Metallic Rip-pl finish, which will give an attractive wave line effect and a metallic sheen in one coat, is announced by Hilo Varnish Corp., 42-60 Stewart Ave., Brooklyn, N. Y. This finish can be used on any non-porous surfaces. No priming, sanding, or other preliminary metal treatments are necessary. One coat of Hilo Metallic Rip-pl hides surface imperfections.

The material reduces seven parts Metallic Rip-pl Enamel to one part of naphtha. It is applied by spraying. Best results are obtained by allowing freshly coated objects to air-dry for 20 minutes before they undergo a bake at 225°F. for 1½ hours. Hilo is also prepared to furnish metallic powder or paste of the particular quality used.

## Permanent Ink for Glass, Porcelain

A new ink is now available for writing on glass or enameled ware. It is available in white and black, and is known as "S. R. L." Brand LN Glass Ink. It can be applied with any steel pen, drawing pen or fine brush. The permanency is increased by gently warming the writing. Unlike diamond ink, which has been on the market for years for etching glass, this new ink is non-corrosive, therefore it can be kept in glass bottles rather than in wax containers. It is non-inflammable.

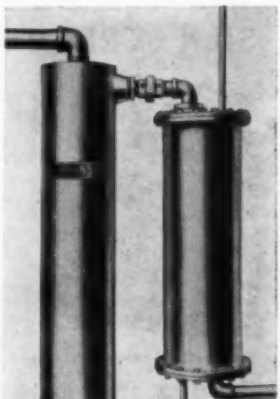
Laboratory tests have proved that this ink will resist the action of such severe corrosive agents as hot sulfuric acid, hot nitric acid, hot hydrochloric acid and concentrated alkalies. Furthermore, this ink is not affected in any way by the action of laboratory solvents such as alcohol, acetone, turpentine, toluene, ethylene dichloride or carbon tetrachloride. It is a product of the Stewart Research Laboratory, 315 22nd St., N. W., Washington, D. C.

**New...**

**MATERIALS**
**SUPPLIES**
**EQUIPMENT**

## Pre-Cooler for Main Air Lines

A pre-cooler for use in improving the extraction of moisture from compressed air lines is announced by Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill. Used in conjunction with the Binks No. 540 Main Line oil-and-water extractor, the new pre-cooler assures maximum effi-



Pre-cooler, moisture-extractor set-up.

ciency in cleaning compressed air lines where excessive moisture is the greatest problem.

Outside shell dimensions: 15-in. in diameter, 36-in. long. Inside of shell is partially filled with air tubes so that heated air goes through them and is cooled by the circulation of water around the tubes at a minimum rate of two gallons a minute. The cooling of air causes it to deposit moisture which is collected by the No. 540 main line oil-and-water trap which directly follows the pre-cooler. Surplus cooling water is piped to a sewer.

The unit will take care of 200-cu.ft. of air per minute. Inlets and outlets in both pre-cooler and extractor are for 2-in. pipe. The No. 540 extractor is 45½-in. high, 8¾-in. in diameter, and is equipped with ¾-in. drain cock.

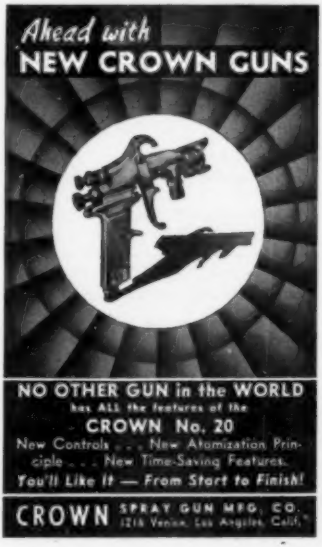
## Air Line Filter

New filters, designed to meet the increasing demand for a highly efficient filtering device in air lines, have been developed by the Fisher Governor Co. of Marshalltown, Iowa. These new filters remove foreign matter and separate free moisture from the air pipe lines with a minimum friction loss. They protect expensive air tools, instruments and other devices against damage and costly service interruptions, while guarding and improving the quality of the finished product.

Fisher filters utilize extremely hard aluminum oxide crystals bonded together as a filter element. This specially manufactured filter element is both acid and heat resisting, and unusually strong. Gases pass through this porous filter with only slight loss due to friction.

The filters may be installed in either vertical or horizontal pipe lines with standard pipe fittings. They are unusually compact. Suitable drain cocks are furnished. Flanged and bolted bottom castings permit easy, quick removal for clean-

ATTENTION
METAL FINISHERS
A high gloss synthetic metallic finish in one coat that produces an excellent two coat appearance.
*Available in Most Bronze Shades*
*Write Today for Sample*
The Mitchell-Mayer Co.
ST. LOUIS, MO.


Ahead with
NEW CROWN GUNS
NO OTHER GUN in the WORLD
has ALL the features of the
CROWN No. 20
New Controls . . . New Atomization Principle . . . New Time-Saving Features.
You'll Like It — From Start to Finish!
CROWN SPRAY GUN MFG. CO.
1218 Venice, Los Angeles, Calif.

ing. The filter body is constructed of high-tensile iron. Filters with screwed connections are available in sizes of ¼ to 1¼-in. inclusive, and with flanged connections from 1½ to 2-in.

## Luminescent Lacquers

Colors that glow with flashing brilliance in darkness are now available in lacquers, water colors, artists' oils and custom dips. These are not the familiar radium or phosphorescent paints, but something new named Conti-Glo. They are products of the Continental Lithograph Corp., 952 E. 72nd St., Cleveland, Ohio.

These remarkable coatings do not glow in darkness, however, unless they are exposed to the invisible rays of "black light," which is harmless filtered ultra-violet rays. The invisible "black light" causes the painted surface to emit radiant colors in darkness while untreated areas disappear or become inconspicuous.

For greatest brilliancy of luminescence, Conti-Glo should be applied over white surfaces; dark-colored objects must first be painted white before application of Conti-Glo. Regular high-grade white lacquers are satisfactory undercoats for Conti-Glo lacquers and invisible liquids, while most white lacquers, oil paints and enamels serve as satisfactory undercoats for Conti-Glo artists' oils.

Conti-Glo can be used in conjunction with ordinary non-luminescent paints to provide a means of changing a scene or setting completely by simply alternating mazda and "black light." In "black light," the areas treated with Conti-Glo luminesce with a vivid colored glow, while the areas painted with ordinary colors turn grey or black.

Regarding the "black light," there are numerous ways of producing "black light" or ultra-violet light. The two most popular are either carbon-arc or mercury vapor. In each case a colored glass filter must be put over the light source to filter out everything but the ultra-violet rays that activate Conti-Glo. General Electric Vapor Lamp Co. are manufacturing a new mercury vapor bulb that has this glass filter blown as an outer shell of the bulb. For the manufacture of sketches, etc., it is merely necessary to insert one of these lamps in a reflector and work under the light. In exhibiting sketches, most electrical sign people make up a portable lighting unit

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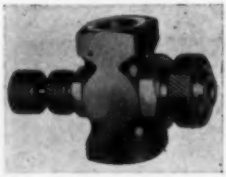
No. 711 METAL PRIMER Air Drying
—as an undercoat for either Lacquer or Synthetic Enamels.
Inquiries from interested manufacturers of metal products, invited.
H. V. WALKER CO., Elizabeth, N. J.
"FINISHES TO FIT THE PRODUCT"
New England Warehouse, Brown & Dean Co., Providence, R. I.

which they take with them for presentation purposes.

There undoubtedly will be a good bit of ultra-violet activated paint decorations at both the New York and San Francisco Fairs next year. The lights will be used to flood murals, etc., which have been painted in fluorescent paints. The effects attained will be arresting and beautiful.

## Spray Nozzle

A new pneumatic atomizing nozzle, announced by Spraying Systems Co., 4922 W. Grand Ave., Chicago, Ill., is suitable for humidifying, indus-



**Made of brass—or other metals.**

trial and chemical processes, paper and textile web spraying, or wherever complete atomization is required. This nozzle is of sturdy construction, accurately machined, and is now available with externally-mixed round spray, internally-mixed round spray and internally-mixed flat spray. Compressed air and liquid pipe connections are both ¼-in. female.

## A Chrome-Plating Rack Enamel

An enamel for insulating all but the contact points of the racks used in chrome plating has been developed by Maas and Waldstein Co., makers of industrial finishes, Newark, N. J., and placed on the market after extensive tests in all types of actual plating service.

MAGIC TACK RAGS remove specks, lint and sand particles—bring out that deep, smooth luster, produce a faultless surface for white or colored finish. Why use "home made" tack rags when you can buy MAGIC TACK RAGS at trifling cost! They are tackier, do not dry—are dust-proof and spontaneous combustion proof. Packed in dozen and gross lots or more. Made only by the

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If your dealer does not carry Magic Tack Rags, write us for sample.

GRAINING PLATES
*bring out the*
QUALITY *you*
*have built in*
YOUR PRODUCT

AMERICAN
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104 E. MASON ST.
MILWAUKEE, WIS.

This chrome rack enamel effectively insulates all parts of the rack that it covers, thereby preventing the dissipation of the current. It is applied by dipping the racks (with the contact points protected by tape) into the enamel. Three or four coats are required, which can be applied at intervals of about two hours. After the final application, the coating becomes hard enough for use if force-dried for two hours at 150°F., or air-dried for 24 hours. The enamel is supplied in two colors—red and black.

## Corrosion Preventative

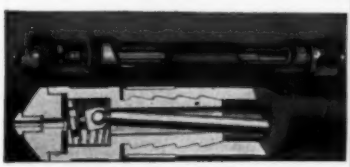
For preventing the slow destruction of iron and steel surfaces by rust (and the corrosion of other metals) the Corrosion Control Corp., 26 Broadway, New York, N. Y., announces a new coating called CO-RES-CO for which patents have been applied, and which can be applied by brushing, spraying or dipping. It is available in black and olive green; dries to touch in about one hour and dries hard within 24 to 48 hours.

Before this material is applied to iron or steel, the surface must be thoroughly clean and free from mill scale, loose rust, loose paint and grease. Where the metal is to be subjected to severe corrosion conditions, and to avoid the possibility of incomplete coverage, two coats can be applied.

Co-res-co will withstand a dry heat temperature of at least 600°F. and a liquid temperature of not more than 125°F. It affords effective protection against severe atmospheric exposure—salt air, salt water, acid fumes, dilute acids and alkalies—as well as other corrosive conditions.

## Air-O-Chek Valve

For concerns that use compressed air for blowing dust from surfaces to be cleaned or finished, a new Air-O-Chek valve unit that screws on to the hose is announced by the Air-Way Pump & Equipment Co.,



625 W. Jackson Blvd., Chicago, Ill. This handy air valve has the unique Air-O-Chek ball-and-socket joint with enclosed actuating lever which eliminates protruding buttons or levers, as well as packing glands. All operating parts are shielded within the valve and air hose. A slight pressure between thumb and finger

Impervious FINISHES for Industrial Use

ENAMELS LACQUERS IMPERVIOUS IVCO PRODUCTS SURFACERS

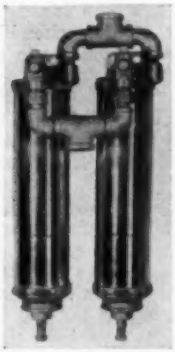
Pyroxylin Lacquers, Baking and Synthetic Enamels, Finishing and Insulating Varnishes, Protective Coatings, Primers and Surfacers, etc.

IMPERVIOUS VARNISH COMPANY, KOPPERS BUILDING, PITTSBURGH, PA.

to flex hose gives a big free-flowing volume of air, with instant positive shut-off when the hose is released. It is furnished with either male or female fitting for conveniently attaching to and removing from hose; made of bar brass and stainless steel for ⅛, 3/16 and ¼-in. hose. A variety of nozzles are available for different types of work.

## Multiple Oil-and-Water Extractors

Where greater capacity in the cleaning of compressed air is required than is given by the ordinary air transformer or oil-and-water extractor, Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill., is offering a series of ordinary extractors hooked up in groups of two or three, with all interconnections made.



Assures clean compressed air for all spraying operations.

The 2-unit combination, known as 537-2, handles 50-c.f.m., while the 3-unit combination handles 75-c.f.m., and is known as the 537-3. For larger capacities up to 200-c.f.m., Binks No. 540 Main Line Extractor is recommended, with individual extractors at each gun outlet.


SPEED + SUPERIOR FINISHES!

Type BU Airbrush with Snaplock Cup—saves time—saves material—speeds production — produces that desired finish.

Paasche Proves Best Way to Finer, Faster Finishes!

Name the aircoating or airfinishing job you want done. There is a Paasche Convertible Multiplehead Airbrush to do it faster, at less cost and give you a superior, more attractive finish.

SAVINGS FROM 30% TO 60% IN TIME, material and labor are not unusual. Let Paasche Engineers indicate new methods to reduce your aircoating and airpainting costs.

IT COSTS YOU NOTHING TO FIND OUT — and may result in important savings for you. Send that letter today — no obligation on your part.

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Most modern and complete AIRFINISHING LINE—automatically and manually operated — FIREPROOF VENTILATING UNITS — AIRRUBBING MACHINES — STRIPERS.

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# EDITORIAL

## Color Trends in Style-Conscious Industries

Automobile manufacturers are keenly alert to color style changes. Each manufacturer retains a color engineer for the express purpose of knowing when a color change is needed and what the new color should be to keep pace with consumers' fancy. Color engineering in the automotive industry entails the same methodical study of the current style situation as is conducted in each major industry where fashion is a factor.

The tie between auto manufacturers and dress manufacturers is growing every day. The motor car builder must be fashion and novelty minded as well as artistic if he is to hold his market.

Fashion openings in Paris, European automotive elegance contests in Monte Carlo, and technicolor reproductions are all carefully scrutinized to determine policy. These studies are reinforced by registering the stream of indications portrayed by colored advertisements and requests for new colors received by dealer organizations all over the country.

Because the automotive market is so vast and the unit of sale so high, it has been found practical to cater to the color likes and prejudices prevailing in different regions. Experiments conducted by the "Duco" Color Advisory Service have disclosed the fact that the public appreciates being consulted as to its car color preferences.

Because leadership is costly, motor car manufacturers tend to keep a weather eye on each other's doings so as not to get too far away from what the majority are offering in the way of color. "If you can't have the right color first, copy it as fast as it registers with the public," seems to be the policy of the times in all industries influenced by fashion tendencies. In the realm of taste, personal preference plays a major role but the dictates of fashion make car buyers select colors they might not otherwise choose.

With the emphasis on speed gaining momentum and the unusually long duration of the monochromatic color treatment on motor cars, it is not unlikely that 2-tone color schemes will re-ap-

pear shortly. Two colors can be arranged to successfully provide an illusion of speed (apparent shape is largely the result of color contrast). This modernized use of color has already been adapted to the exterior color treatment of the new fast-looking train exteriors. It is part of the picture the eye expects in any modern automobile.

Nature has provided color ideas for streamlining from times immemorial. The mackerel is a marine "streamliner" of nature's manufacture as regards both color and line. Its blue-green back and aluminum sides conform to the man-discovered principle that the correct distribution of color areas on vehicles adds much to the desirable sensation of speed in this age of hurry.—HOWARD KETCHAM, Color Consultant, "Duco" Color Advisory Service.

## Improved Enamels for Metal

Manufacturers everywhere have been seeking harder more durable finishes for their products. It is no longer enough to build a product that looks attractive when it is first sold; that beauty and glistening color must endure if customer good will is to be maintained.

Examine the white finish on any metal product that is more than two years old and see if it has yellowed or become marred through use. Have acids or alkalis left their traces? Has the original luster faded?

It is now possible to produce air-dry and bake finishes that are economical, tough, flexible, nonyellowing and resistant to the various factors that tend to break down finish coatings. That problem has been solved by research technicians in several of the finish manufacturing establishments.

Placing first things first, the primers or ground coats that are properly formulated and applied offer the best defense against moisture. They afford an ideal base for the application of modern air-drying or baking enamels. They are recommended for use wherever a substantial bond

must be established between metal, wood, or composition surfaces and the finishing coat.

The smooth even texture of some of the latest enamels has the glass-like surface of porcelain enamel but at the same time it is fitted to withstand rough treatment because of its remarkable adhesion and flexibility.

Bright initial colors and almost perfect color retention after years of service have been achieved. The effect is a lasting, gleaming

surface that is truly "as hard as ivory and as tough as vulcanized rubber."

## Make the Finish Impart Glamour to Your Products

Glamour in a product, as in a person, is a peculiar quality of attractiveness and individuality that excites our admiration. It fascinates us. It's one of those desirable qualities that makes for popularity. Glamour in performance, design and finish is characteristic of products that sell in large volume today. Even the latest household appliances have glamour. Smart manufacturers have ordered their designers to put more glamour into their new models. That's what captures their public's attention and stimulates the urge to buy.

Progressive manufacturers of finishes and decorative materials have sensed this trend and they have accomplished remarkable results in developing surface coatings that help to glorify the products of their customers. Likewise the manufacturers of tools and equipment for applying finishes have added many new developments and improvements that aid the painters, finishers and decorators in their work of putting on a glamourous finish.

An attractive finish that beautifies the product may cost little if any more than a plain utility coating, but what a difference it does make when that product is exhibited for sale—and when it is placed in service. Evidence of the superior appearance of attractively finished products abounds everywhere, but some manufacturers are slow to awaken to the fact that so much greater sales value and sales appeal can be easily added to their products.

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## Let That Salesman In

Every experienced salesman of finishing materials, supplies and equipment is a mine of information. The wise buyer will dip into this fund of knowledge at every opportunity. Salesmen who are actually supplying materials or supplies should be permitted to see the foreman finisher reasonably often.

Many concerns, particularly large ones, are inclined to stop all salesmen at the purchasing department — permitting certain representatives to enter the shop only when there is a definite problem to be considered.

Obviously, each salesman will make calls when the buyer has no problem and when the salesman has nothing new to present. Such calls may result only in courting friendship. In these cases the astute buyer will exchange whatever information might be of mutual value and then end the interview quickly. In this way he will have time to see more salesmen who call. He can keep uptodate and he will be reasonably certain that he is buying wisely.

Often the finish manufacturer's representative can see ways to improve the finish or improve conditions. The finisher is so close to his job that he may fail to see things that are evident to the salesman. Salesmen visit numerous plants and are familiar with things that are entirely new to the finisher. But this "operation information" is seldom given to the purchasing agent. There is no inspiration for it until the salesman gets into the plant, sees conditions and notices where improvements can be made or economies effected.

## Give Finish Supplier a Chance to Make Good

Failures in the finish or unsatisfactory performance should not always be the signal for immediately condemning the material and switching to some other brand of goods. Probably that same manufacturer can supply a material that will meet the conditions and requirements of the user, provided he knows exactly what they are.

Frequently the buyer's insistance upon getting material at a low price per gallon leads the finish manufacturer's representative to supply his company's cheapest material instead of the best that is available for the work. Of course, if a low price material will perform satisfactorily, well and good; but if it doesn't, the man who sold the goods should be the first to learn about it. Then he can explain to the user that his company has other materials, at perhaps slightly higher prices per gallon that will do the job satisfactorily — according to


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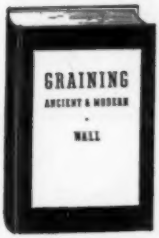


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## Case History No. 11

The aircraft industry presented an interesting problem to seal the joints and seams of gasoline tanks and pontoons, particularly when spot welded. In cooperation with government and other research workers in this field, a seam compound was developed that appears to meet all these rigid requirements for aircraft.

The compound is transparent and has a heavy consistency. It is generally applied to or in the seam or joint by pressure gun or brush. Since the compound is resistant to vibration as well as to gasoline, it is admirably adapted for sealing seams of gasoline tanks used in cars, trucks, boats, stoves, as well as those used in airplanes and on pontoons to protect the seams from either salt or fresh water.

Manufacturers of aircraft and accessories, or others interested in this problem, or in the solution of a specific problem of their own, are invited to write, furnishing all details, to—INDUSTRIAL RESEARCH, DIVISION OF WIPE-ON CORPORATION, 105 HUDSON STREET, NEW YORK. A complimentary copy of "Case Histories" will be sent covering this and other problems such as, non-discoloring white metal finishes; burnproof enamels; two-tone finishes, eyelet coatings; 10 minute air dry metal finishes; magnesium alloy finishes, and coatings to resist alkali, alcohol and acids, together with a solution of the problem submitted.

conditions under which it is to be used.

For example, we have in mind a plant using black wrinkle finishes. This concern goes in for large volume production at considerable speed. Shop conditions are not ideal, but the products are all of good quality and have an attractive appearance. The wrinkle finish is sprayed and the parts are placed in portable racks to await entrance to an oven. Sometimes the sprayed products stand one or two hours before entering the oven. The brand of wrinkle finish formerly used would not always wrinkle properly and sometimes it showed a grayish cast. The foreman declared that conditions had to be practically ideal for it to perform satisfactorily.

Eventually the company switched to another brand of wrinkle finish and this material works out perfectly, even when it is long delayed getting into the oven. It comes out a glossy jet black with uniform wrinkle texture.

According to our information, some wrinkle finishes are formulated to perform perfectly under these conditions, while others must be moved into the oven within say 15 or 20 minutes after being sprayed. It is questionable whether the manufacturer of the formerly used wrinkle finish ever learned the real reason why his materials are no longer used in this plant. Probably he could have supplied a material that would have performed satisfactorily under the delayed oven drying schedule.

This instance is typical of what happens to many good finishing accounts — and much the same

thing applies sometimes in the case of supplies and equipment. A great responsibility rests on the local representative who contacts the company using finishing materials. He should find out exactly what the operating conditions and requirements are, and report same to his company, so that suitable materials can be supplied if they are available.

## Prime Coating Before Machining Metal

While we usually think of metal finishing as an operation that takes place after metal cleaning, following complete machining of the parts and products, it is the practice in some establishments to clean the metal and prime coat it before machining the castings. The purpose of this is to protect the surface so that the final finish will have lasting adherence and withstand long service.

In the first place, a good prime coating serves to prevent the entrance and lodgment of oils and greases in the more or less porous metal. It saves the freshly machined surfaces from going through metal cleaning and water rinsing afterward—which, in the case of iron or steel, might cause quick films of rust to appear. Any grease or oil that gets on the prime coated surfaces is quickly and easily wiped off with naphtha or thinner.

Another reason for prime coating iron and steel castings before machining is to prevent rusting, which is liable to occur in cases where castings are stored for some time or shipped for some distance before machining.

If any parts of the prime coated surface becomes scuffed or worn bare, during machining and handling, these areas are touched up before the finishing enamel is applied.

## Protect Workmen From Accidents

Every industry has its own problems to solve in preventing accidents. Due to the multiplicity of operations, hundreds of different hazards are encountered which make necessary a large variety of accident prevention equipment to protect workmen.

To aid in solving industry's protective problem, the American Optical Company, Southbridge, Mass., announces a new and complete line of highest quality protective clothing, gloves, sleevelets, leggings, aprons, hats and hoods. These products are available in a variety of materials used to protect workmen from heat, fire, acids, cuts, abrasions, etc. The materials used and the finished products are designed to give maximum comfort and protection under specific conditions.


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